

A. BRYAN & W. JONES.
 SPRINKLER OR DEVICE FOR SPRAYING AND DISTRIBUTING LIQUIDS.
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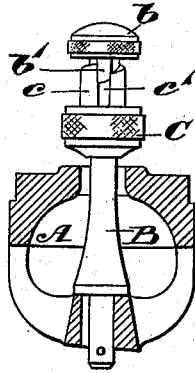


Fig. 1.

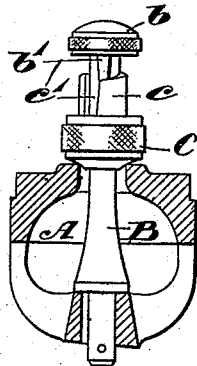


Fig. 2.

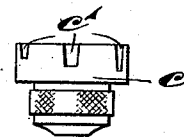


Fig. 4.

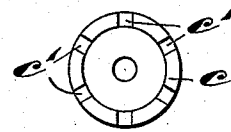


Fig. 5.

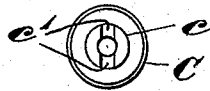


Fig. 3.

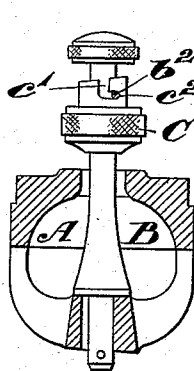


Fig. 6.



Fig. 7.

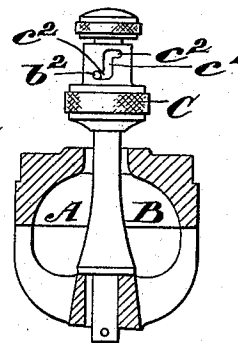


Fig. 8.

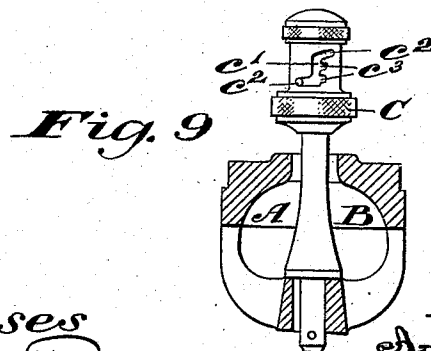


Fig. 9

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UNITED STATES PATENT OFFICE.

ARTHUR BRYAN, OF MINWORTH HALL, NEAR BIRMINGHAM, AND WALTER JONES, OF STOURBRIDGE, ENGLAND.

SPRINKLER OR DEVICE FOR SPRAYING AND DISTRIBUTING LIQUIDS.

937,507.

Specification of Letters Patent.

Patented Oct. 19, 1909.

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To all whom it may concern:

Be it known that we, ARTHUR BRYAN and WALTER JONES, both subjects of the King of Great Britain, the former residing at Minworth Hall, near Birmingham, in the county of Warwick, England, and the latter residing at Stourbridge, in the county of Worcester, England, have invented certain new and useful Improvements in Sprinklers or Devices for Spraying and Distributing Liquids, of which the following is a specification.

This invention relates to sprinklers or devices for spraying and distributing liquids, such as partially treated liquid sewage, trade effluents, and water, upon surfaces of filter beds, roads, lawns, and other surfaces upon which liquid is required to be distributed; and relates particularly to sprinklers of the general type of those to which our invention described in patent specification Number 830963 dated 11 September 1906 relates.

The main purpose of our present invention is to construct a sprinkler in such manner that a spreader which is used in conjunction with an annular jet orifice through which the liquid passes out from the body of the sprinkler may be capable of sliding endwise, in relation to such orifice, along a stalk which carries it, to adjust its position thereon, or to close the orifice entirely, whereby when a number of sprinklers are used in a single installation, such as upon water distributing pipes over a filter bed, or upon a distributing pipe of a water cart, they may be adjusted more readily than heretofore to give a substantially uniform spray, and any of them be cut out independently of others; but the invention comprises also the construction of a sprinkler (in which the spreader is capable of sliding endwise along a stalk which carries it) in such manner that the spreader may be simply either fully out or be completely closed in, whereby a simpler form of construction is admissible, though at the sacrifice of adjustability; and in either case the apparatus may be constructed so that the spreader can never be entirely closed in.

Broadly describing a practical elementary form of the invention, whether a sprinkler is required to be adjusted to vary the volume of flow or the character of the spread, or not, the spreader is capable of a turning and also an endway movement in relation to the stalk which carries it and which passes

through the outlet opening of the body of the sprinkler, leaving a space all around between itself and the edge of such opening which constitutes the annular jet opening. The stalk has rigid therewith a stud or lug, which is carried either directly by the stalk or by a head which is rigid with the stalk, and the spreader is formed with a slot which, when the spreader is in such axial position around the stalk as to bring the slot into register with the stud or lug, allows the spreader to move endwise along the stalk.

The invention (which comprises a spreader capable of endway sliding movement along a stalk which carries it) is capable of considerable variation in detail, and in order that it may be fully understood and readily carried out in practice, we will describe, by reference to the drawings herewith, a number of forms thereof which differ somewhat from one another in details which are themselves of some importance, but not as intending to limit the invention to the particular forms illustrated.

Figure 1 is a vertical section through the body of a sprinkler, showing the stalk and spreader in side elevation, the latter in its open position, and illustrates a very simple form of the invention suitable for use when it is simply required that the spreader shall be, at will, either fully open or closed down. Fig. 2 is a corresponding view to Fig. 1, but shows the spreader closed down, and; Fig. 3 is a plan view of the spreader.

A is the body of the sprinkler, B the stalk, and C the spreader. A vertical slot c^1 is cut down into a portion c of reduced diameter of the spreader, and a corresponding lug b^1 projects downward from the head b of the stalk, or this lug, or a stud in lieu thereof, may project simply from the side of the stalk. When the spreader C has been turned around the stalk B to bring its slot c^1 into register with the lug b^1 , the spreader may rise as indicated by Fig. 1; and it is preferred to form both the slot c^1 and lug b^1 somewhat taper, as shown, to insure that the spreader will tighten itself sufficiently onto the lug to retain it in its open position, until pushed down by hand. When, however, the spreader is down clear of the lug b^1 , and is then turned to bring the slot c^1 out of register with the lug, as shown by Fig. 2, it cannot rise again; and it is preferred to somewhat incline the top of the spreader, so

that, by turning it in the proper direction therefor under the lug c^1 , it will tighten itself sufficiently to insure that it will remain in the position into which it has been turned
 5 until it is turned back again with some force. It is preferred to form two slots in the spreader, opposite to one another, as shown by Fig. 3, and to provide two corresponding lugs.

10 The sprinkler illustrated by Figs. 1, 2 and 3 may be modified to give two heights of opening by providing a single lug only and two slots, one of the slots being formed to allow the spreader to rise higher than the
 15 other slot will allow, but in such case a portion of the top of the spreader should be in a single plane to allow the spreader to be turned to bring either slot into register with the lug.

20 Fig. 4 is a detached side view, and Fig. 5 a detached plan view, of a spreader in which a number of slots c^1 , of different depths, are cut down in a portion c of enlarged diameter, this modification providing for several
 25 degrees of opening.

Fig. 6 is a corresponding view to Fig. 1, but shows a stud b^2 for engagement with the slot c^1 , and a sideways notch c^2 from the lower end of the slot which, by turning the
 30 spreader when it has been fully raised, may be engaged, as shown, with the stud, to retain the spreader in its raised position. This stud b^2 may project directly from the side of the stalk B , or may project inward from
 35 a downward arm b^3 of the head b , as shown in side elevation by Fig. 7.

In Fig. 8, which is a view corresponding to Fig. 6, the slot c^1 is shown as closed also at its upper end, and a sideways notch c^2 is
 40 formed out from both the lower and upper end of the slot c^1 , the upper notch being for the purpose of holding the spreader in its closed position. These notches are shown as formed out from opposite sides of the slot,
 45 but they may, of course, be both formed out from the same side.

In Fig. 9, which is a corresponding view to Fig. 8, two intermediate notches c^3 (in addition to the notches c^2) are shown formed
 50 out from the slot c^1 , to hold the spreader at different heights of opening. The uppermost notch c^2 is shown as inclined, to enable the spreader to be tightened down upon its seat.

55 It will be obvious that a plurality of sideways notches may be formed out from an open-ended slot, to hold the spreader at different heights of opening.

It will be obvious also that the part described as a vertical slot may be stationary in relation to the stalk, and the lug or stud
 60 be carried by the spreader, though such an arrangement would not be so convenient as that in which the slot is formed in the spreader and the lug or stud is stationary;

and, in lieu of a vertical slot, a depression may be formed which, when in register with the lug or stud, will allow the spreader to be raised.

Having fully described our invention, 70 what we claim and desire to secure by Letters Patent, is:—

1. In a device for spraying and distributing liquid, a stalk, a spreader slidably mounted around the stalk, a shoulder on the
 75 spreader, and a shoulder on the stalk behind which the shoulder on the spreader may be brought by turning the spreader, said shoulder on the stalk then constituting a stop against outward movement of the
 80 spreader.

2. In a device for spraying and distributing liquid, a stalk, a spreader slidably mounted around the stalk, a shoulder on the
 85 spreader, and a shoulder on the stalk behind which the shoulder on the spreader may be brought and the spreader thereby secured against its seat.

3. In a device for spraying and distributing liquid, a stalk, a spreader slidably
 90 mounted around the stalk, a projection rigid with one of these parts, an opening in position of constant location in relation to the other of these parts, said projection and opening when brought into register with one
 95 another, by turning the spreader as required, allowing the spreader to open, and a shoulder on the part in relation to which the opening is in position of constant location behind which said projection will be when
 100 the spreader is suitably turned in bringing the opening and projection out of register with one another, thereby providing a stop against outward movement of the spreader.

4. In a device for spraying and distributing liquid, a stalk, a spreader slidably
 105 mounted around the stalk, a shoulder on the spreader, and a shoulder on the stalk behind which the shoulder on the spreader may be brought by turning the spreader,
 110 one of said shoulders being inclined, whereby the spreader may be tightened against its seat.

5. In a device for spraying and distributing liquid, a stalk, a spreader slidably
 115 mounted around the stalk, a slot which has a constant location in relation to one of these parts, a projection on the other part which enters such slot, and a sideways notch from such slot which may be engaged with
 120 the projection by turning the spreader.

In witness whereof we have hereunto signed our names this seventh day of May 1908, in the presence of two subscribing witnesses.

ARTHUR BRYAN.
 WALTER JONES.

Witnesses:

ROBERT G. GROVES,
 ERNEST PARKER.