T. P. PRESTGARD.

SPRINKLING MACHINE.

APPLICATION FILED JAN. 2, 1920.

1,388,440.

Patented Aug. 23, 1921.

2 SHEETS—SHEET 1.

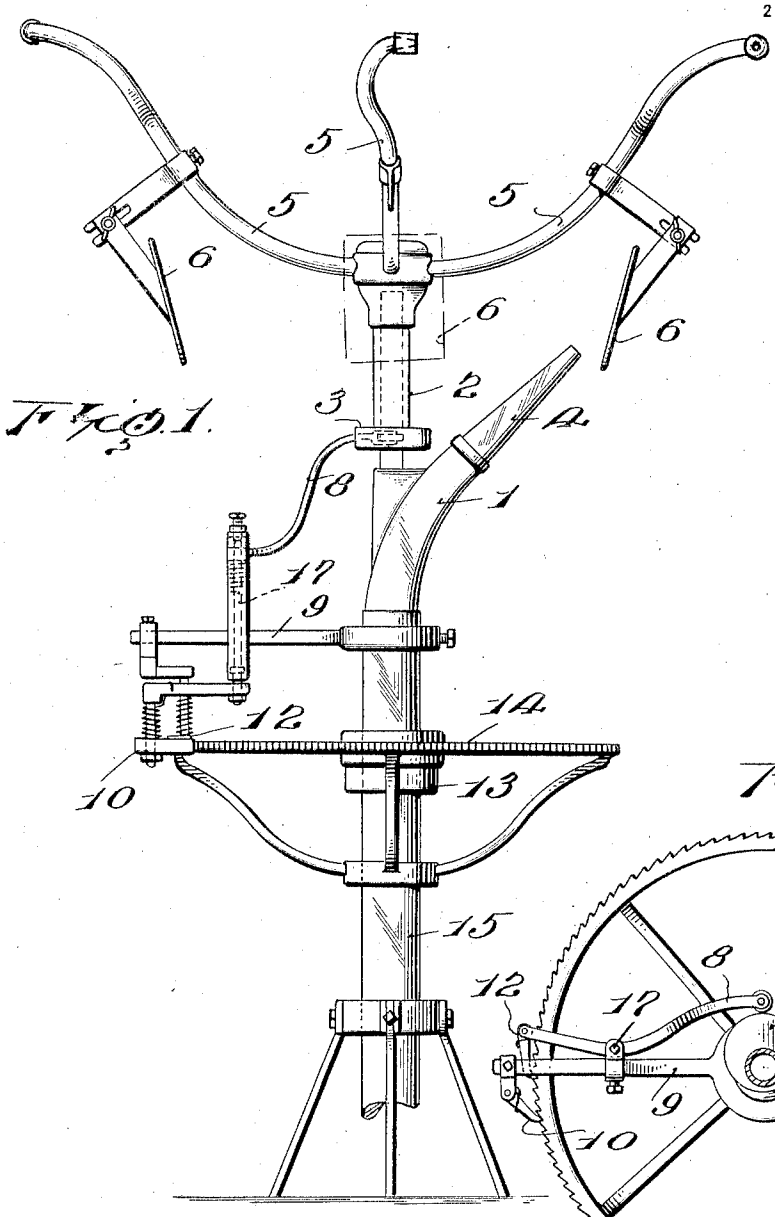


FIG. 1.

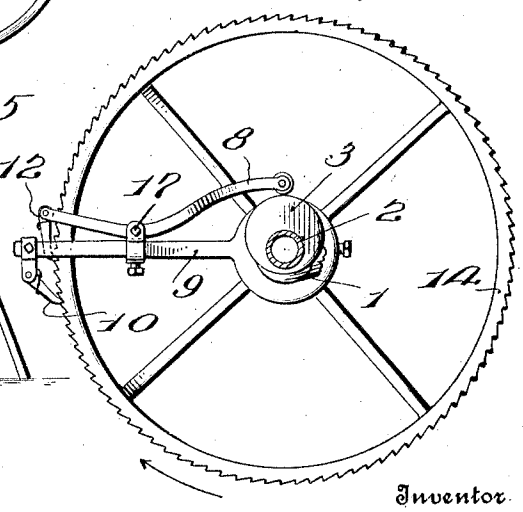


FIG. 4.

Inventor

T. P. Prestgard,

By H. R. Kerslake.

Attorney

T. P. PRESTGARD.

SPRINKLING MACHINE.

APPLICATION FILED JAN. 2, 1920.

1,388,440.

Patented Aug. 23, 1921.

2 SHEETS—SHEET 2.

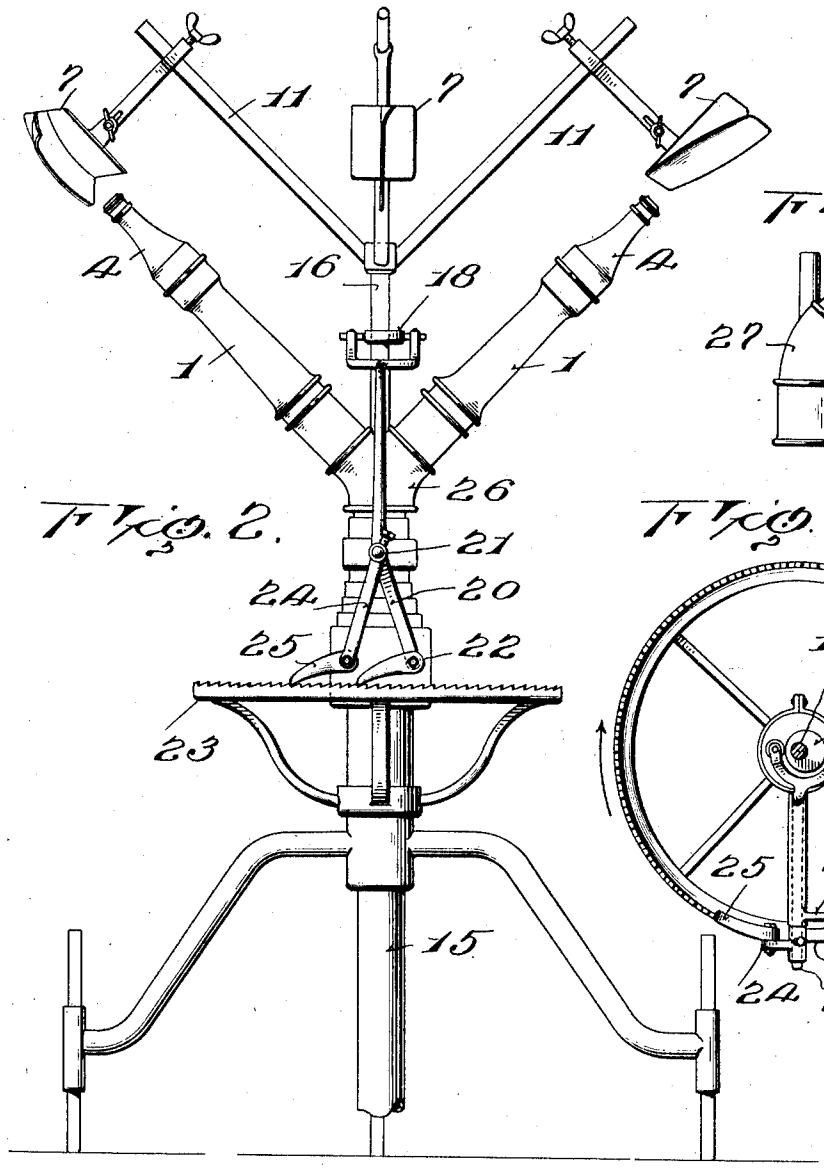


FIG. 2.

FIG. 3.

FIG. 5.

Inventor

T. P. Prestgard

By H. R. Kerslake.

Attorney

UNITED STATES PATENT OFFICE.

THOR PAULSEN PRESTGARD, OF HEDALEN, NEAR SJOA, NORWAY.

SPRINKLING-MACHINE.

1,388,440. Specification of Letters Patent. Patented Aug. 23, 1921.

Application filed January 2, 1920. Serial No. 349,045.

To all whom it may concern:

Be it known that I, THOR PAULSEN PRESTGARD, a subject of the King of Norway, residing at Hedalen, near Sjoa, Norway, have invented certain new and useful Improvements in a Sprinkling-Machine, (for which I have filed an application in Norway, Feb. 1, 1916, No. 8694;) and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The present invention has for its object a sprinkling machine of the kind, in which a jet mouth piece, rotatable upon a vertical shaft, is moved automatically by means of a turbine or the like and comprises the combination with a jet mouth piece, the axis of which forms an angle with the axis of rotation of a pawl mechanism which engages a stationary ratchet wheel and effects a stepwise movement of the jet mouth piece. On rotatable arms connected with the pawl mechanism are mounted deflecting vanes for the jet. The construction may also be carried out in such a manner, that the gradual rotation of the jet mouth piece about its axis takes place by means of the water pressure against suitable vanes fastened to the rotating system, which transmits the movement to the jet mouth piece, whereby the vanes serve as deflectors as well as driving vanes.

Two forms of the invention are illustrated on the accompanying drawing.

Figure 1 is a view of one form of the invention, and Fig. 2 is a corresponding view of a modified form. Fig. 3 is a detail. Fig. 4 is a fragmental top plan view of the form shown in Fig. 1, and Fig. 5, is a fragmental top plan view of the form shown in Fig. 2.

In the form of the invention illustrated on Figs. 1 and 2, the tube 1 is rotatably connected with the water supply pipe or hose 15, kept in place by means of nut or collar 13 and ends in the jet mouth piece 4. A narrow branch tube leads water to head piece or support 2. Said head piece 2 includes a plurality of narrow tubes 5, the form of which is so determined that they are rotated in a known manner by the reaction of the water running through them. On said tubes 5 are mounted the adjustable deflecting vanes 6, the object of which is to break up the main jet and thereby cause an even distribution of the same. On the head piece 2, which, as it will be understood, rotates independently of tube 1, there is mounted a cam or eccentric 3, which operates pawl 12 by means of arm 8 and shaft 17. Pawl 12 is in engagement with the stationary ratchet wheel 14. By means of arm 9, which is mounted on the rotatable tube 1 and the stationary pawl 10 mounted thereon, tube 1 with jet mouth piece 4 is given a slow rotating movement. The object of making the velocity of rotation slow is to avoid the side pressure of air on the jet, so that the same may have the longest possible range. As it will be understood the jet mouth piece is given a stepwise movement being alternately moved in the direction of rotation and kept stationary.

In the form of the invention illustrated on Figs. 2, 3 and 5, the water jets from mouth piece 4 strike the underside of vanes 7 fastened on arms 11, said arms 11 being fastened on the central shaft 16 with the eccentric or cam 18. The vanes 7 are so formed, that they are driven in one direction by the water pressure and given a rotating movement together with the parts 11, 16 and 18. As it will be seen the eccentric 18 in this form of the invention is not rotated by means of the reaction of the water as in the tubes 5 of Fig. 1, but the rotation takes place by the action of the water jet against vanes 7. Said vanes 7 therefore serve both as a means of breaking up the jet from tube 4 and as an action turbine for driving the eccentric or cam 18, by the rotation of which is oscillated the lever 19, 20, which is pivoted on trunnion 21. The arm 20 is provided at its lower end with a pawl 22, engaging the pawl wheel 23. On the trunnion 21 is further mounted a stationary arm 24, which is provided at its lower end with a pawl 25, also engaging the pawl wheel 23. Owing to the oscillating movement of the lever 19, 20, pawl 22 will give wheel 23 and thereby the whole tube system 1, 4 a stepwise rotative movement on the central shaft, whereby the direction of the main jets as in the construction illustrated on Fig. 1, will gradually change, so that the jets are distributed on the whole field to be sprinkled. When the main jets through tubes 4 are not deflected by vanes 7, the tubes are stationary, and the jet in these move-

ments has its longest range. As soon as the vanes 7 are moved into the path of the jets, the jets are gradually deflected and strike the part of the field nearer the center. During this deflecting process also takes place the feeding movement by means of pawl 22, so that there is no side pressure on the jet, when the same is running free.

Otherwise this apparatus operates as the one illustrated on Fig. 1.

The apparatus may be provided with two jet mouth pieces 1, 4 or with a single one. In the latter case a bent tube piece 27 is used instead of the branch tube piece 26. As it will be seen all the driving power for the stepwise rotation of tube 1, 4 is supplied by vanes 7, and so it is possible to avoid all narrow outlets as for instance tubes 5 on Fig. 1, and this is of great importance for the stability of the operation, as it is well known that narrow outlets of this kind are liable to be plugged up.

Claims.

1. A sprinkling machine including in combination, a rotatable jet piece, a rotatable support including a plurality of radiating arms, vanes connected on the arms and arranged in the path of the water issuing from the jet piece for breaking the water into a spray, and a pawl and ratchet mechanism mounted about the axis of the jet piece and operably connected with the support so as to be actuated thereby to consequently impart a stepwise rotative movement to the jet piece.

2. A sprinkling machine including in combination, a rotatable jet piece, a rotatable support including a plurality of arms arranged in radial relation with respect to each other, adjustable vanes depending from the arms and arranged in the path of the water issuing from the jet piece, a ratchet wheel mounted about the axis of the jet piece, and pawls coacting with the ratchet wheel and operably connected with the support so as to be actuated thereby to consequently impart a stepwise movement to the jet piece.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

THOR PAULSEN PRESTGARD.

Witnesses:
E. S. HENDRICKSEN,
A. B. COOK.