

No. 702,792.

Patented June 17, 1902.

H. H. GRAY.
LAWN SPRINKLER,
(Application filed Aug. 14, 1901.)

(No Model.)

Fig. 1.

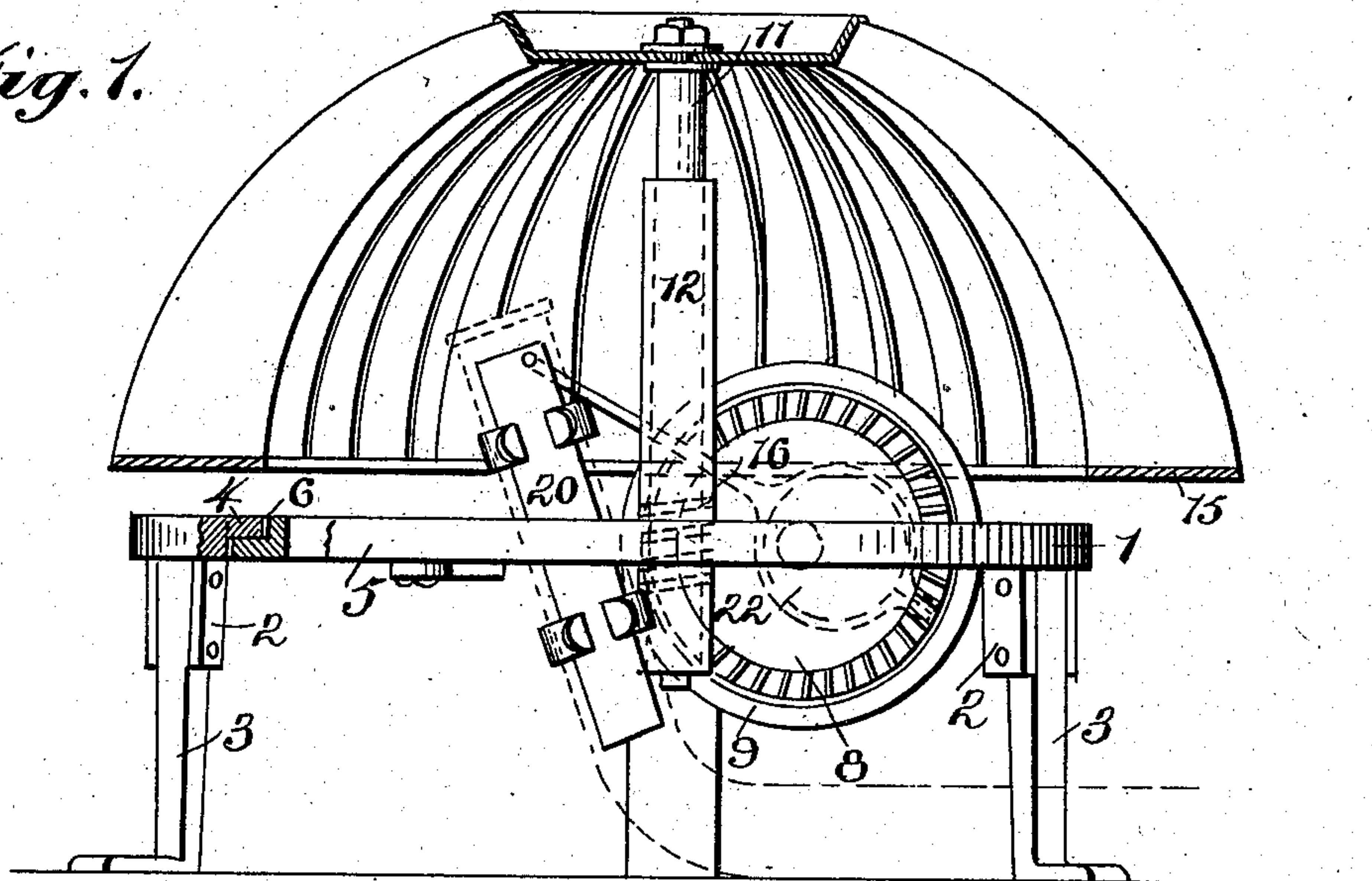


Fig. 2.

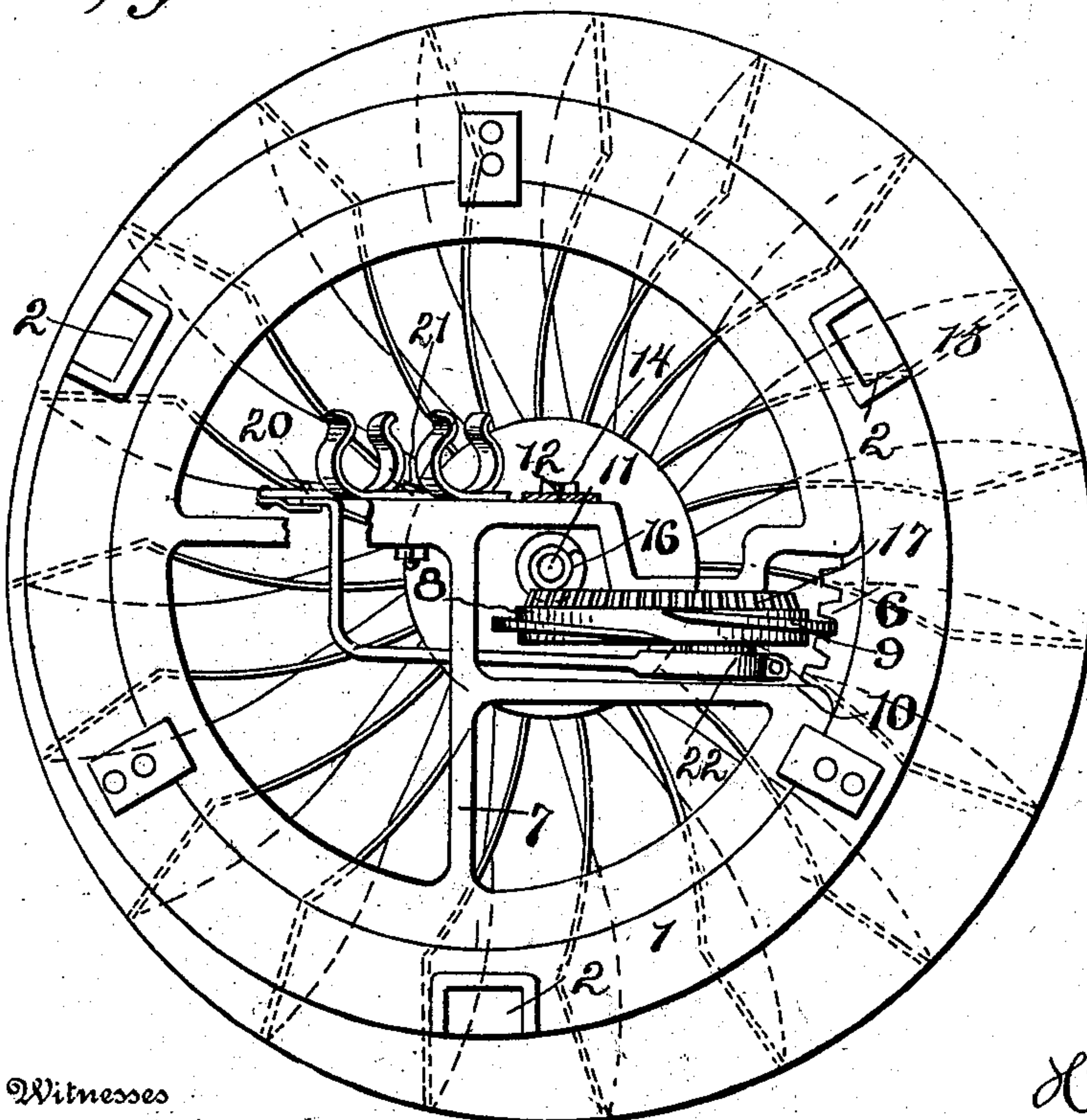
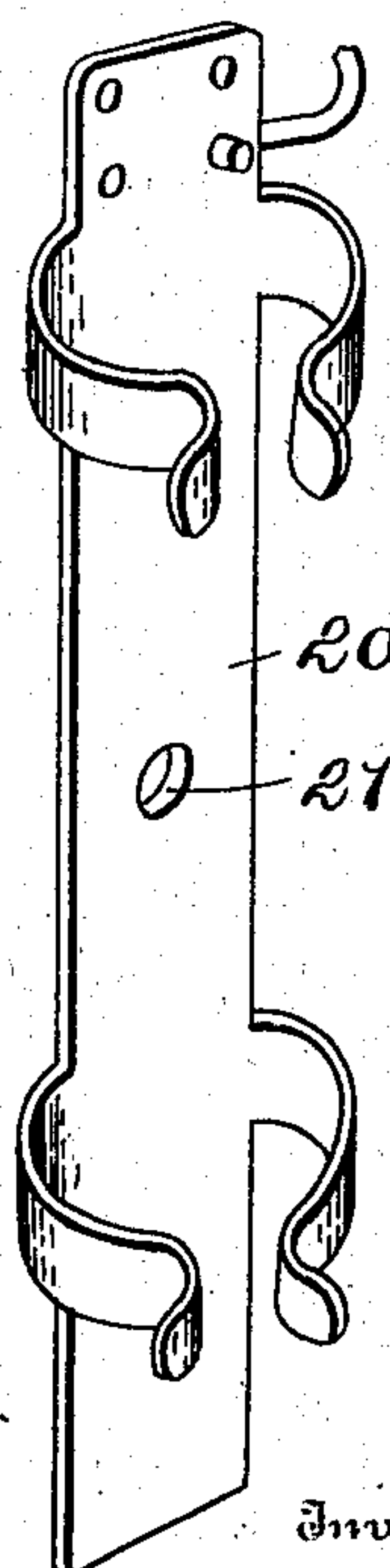


Fig. 3.



Witnesses

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HOWARD H. GRAY, OF HUNTINGTON, INDIANA.

LAWN-SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 702,792, dated June 17, 1902.

Application filed August 14, 1901. Serial No. 72,021. (No model.)

To all whom it may concern:

Be it known that I, HOWARD H. GRAY, a citizen of the United States, residing at Huntington, in the county of Huntington and State of Indiana, have invented new and useful Improvements in Lawn-Sprinklers, of which the following is a specification.

My invention relates to improvements in lawn-sprinklers, and pertains to a sprinkler provided with improved means whereby the water from the hose causes the rotation of a propeller-wheel, whereby a nozzle-carrying member is automatically directed at all points of a circle and at the same time raised and lowered.

In the accompanying drawings, Figure 1 is a side elevation of a sprinkler embodying my invention. Fig. 2 is an enlarged inverted plan view. Fig. 3 is a detached view of the hose-clamp.

Referring now to the drawings, 1 indicates an annular supporting member or ring, which is provided at its under side with a plurality of leg-supporting sockets 2, in which the supporting-legs 3 are securely attached. The inner edge of this supporting-ring 1 is cut out, as shown at 4, for the purpose of forming a supporting annular shouldered recess for the inner rotatable ring 5. The periphery of the supporting-ring 1 is provided with cogs 6, and through the medium of a mechanism, to be hereinafter described, the inner ring 5 is revolved.

A suitable supporting frame or web 7 is carried by the inner ring 5, and journaled in this frame or web is a wheel 8. This wheel 8 has its edge or periphery provided with a worm-gear 9, adapted to mesh with the cogs 6 of the outer supporting annular member or ring 1, the inner or revoluble ring or member 5 being cut out, as shown at 10, to permit the said worm of the wheel 8 to engage the said cogs.

A revoluble shaft 11 is supported in a suitable vertically-arranged frame 12, which is secured to the supporting frame or web 7 of the inner ring 5 at the point 14, the upper end of the revoluble shaft 11 projecting considerably above the said rings or annular members and has connected therewith a suitable

umbrella-shaped propeller-wheel 15. The lower portion or end of the revoluble shaft 11 carries a suitable worm 16, which is in mesh with laterally-projecting cogs 17 upon one face or side of the wheel 8.

A nozzle-supporting member 20 is centrally pivoted to the supporting-frame 7 of the inner ring 5 through the medium of a centrally-arranged bolt 21, the said bolt being sufficiently loose to permit an oscillation of the said nozzle-clamp. The nozzle-clamp is so constructed that while the nozzle is supported it will permit it to turn therein as the inner revoluble ring 5 is rotated, and thus prevent a winding or twisting of the hose.

A cam or eccentric 22 is formed as a part of or rigidly connected with the wheel 8, and this cam or eccentric is connected with the nozzle-clamp for the purpose of oscillating it, and hence automatically lowering the outlet end thereof, thus changing the range of water-throw from the maximum to the minimum distance, which thoroughly waters all points within the range of throw which depends upon the water-pressure, as is well understood.

In operation the machine is supported by the legs 3, which, as before stated, are connected with the outer annular member or ring 1 and the nozzle of the hose connected with the hose-clamp. When the water is turned on, it is directed against the said propeller-wheel 15, which causes the same to revolve, which in turn revolves the shaft 11, and the shaft 11, being in mesh with the wheel 8 through the medium of the worm 16 and the cogs 17, causes the said wheel to also revolve. The revolution of the wheel 8 causes the annular ring 5 to revolve by reason of the engagement of the worm 9 with the cogs 6 of the stationary outer supporting-ring 1. Therefore the wheel 8 travels around with the annular ring 5 and carries with it the hose-clamp 20, which is attached to the annular ring at a point to one side of its axis, which, together with the cam or eccentric action, causes the water to be directed automatically to all points of a circle and the nozzle simultaneously raised and lowered. The ring 5, which carries the nozzle-support, travels around

comparatively slow, while at the same time the exit end of the nozzle is being raised and lowered.

By means of a sprinkler constructed as herein shown and described I am enabled to cover a very large area sufficient to represent an ordinary lawn and at the same time to cover completely the space between the extreme point of throw and the sprinkler itself, thus thoroughly and equally watering the area within the range of water-throw from the nozzle.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A sprinkler comprising an annular supporting-frame, a rotatable frame supported thereby, a propeller-wheel supported by said rotatable frame, an intermediately-pivoted hose-supporting clamp adapted to travel around said propeller-wheel, and means carried by the rotatable frame for oscillating said hose-clamp, substantially as described.

2. A sprinkler comprising an annular supporting-frame, cogs carried by the inner periphery of said supporting-frame, a rotatable frame mounted therein, a centrally-located vertical shaft carried by said rotatable frame, a worm-gear carried by the rotatable frame and driven by said shaft and meshing with the gear on the supporting-frame, a propeller-wheel carried by the upper end of said shaft, and a hose-clamp carried by said rotatable frame and adapted to travel around said propeller-shaft, substantially as described.

3. A sprinkler comprising an annular stationary member having cogs upon its inner periphery, a revoluble member carrying a worm-gear in engagement with the said cogs, a revoluble shaft being operatively connected with the worm-gear, substantially as described.

4. A sprinkler comprising an annular horizontal stationary member having cogs upon its inner periphery, an annular revoluble member supported thereby, a worm-gear carried by the revoluble member, a vertically-arranged shaft supported by the revoluble member, a propelling member connected with the said shaft, the shaft and worm-gear being operatively connected, and the worm-gear in engagement with the said cogs, of the stationary annular member, and a nozzle or hose support, substantially as described.

5. A sprinkler comprising an annular horizontal stationary member having cogs upon its inner periphery, a circular horizontal revoluble member supported thereby, a vertically-arranged worm-gear carried by the revoluble member and meshing with the said cogs, a vertically-arranged revoluble shaft carried by the revoluble member and having a worm-gear in engagement with the said vertically-arranged wheels, a propeller-wheel attached to said shaft, and an eccentrically-ar-

ranged hose clamp or support carried by the said revoluble member, substantially as described.

6. A sprinkler comprising an annular horizontal stationary member having cogs upon its inner periphery, a revoluble member carrying a worm-gear in engagement therewith, a propelling member carried by the revoluble member and operatively connected with the said worm-gear, and an eccentrically-arranged hose or nozzle carrier connected with the said revoluble member, substantially as described.

7. A sprinkler comprising a supporting member, a rotatable member supported thereby, a propeller-wheel carried by the rotatable member, a worm-gear in engagement with the supporting-frame, means carried by one side of said worm-gear by means of which it is driven, a hose-supporting clamp carried by said member, and means carried by the opposite side of said worm-gear for oscillating said hose-clamp, substantially as described.

8. A sprinkler comprising an annular supporting member, a revoluble member, a wheel journaled therein and having a worm, engaging cogs formed upon the inner periphery of the annular member, a vertically-arranged shaft carrying a worm in engagement with said cogs carried by the side of said wheel, a propeller-wheel carried by the upper end of said shaft, a hose-clamping member pivotally connected to said revoluble frame, and an eccentric connected to the side of said wheel and connected to the hose-clamping member, substantially as described.

9. A sprinkler comprising an annular horizontal stationary member having cogs upon its inner periphery, a circular horizontal revoluble member supported thereby, a vertically-arranged wheel carried by the revoluble member and having a worm-gear meshing with the said cogs, a vertically-arranged revoluble shaft carried by the revoluble member and having a worm-gear in engagement with the cogs carried by one side of said vertically-arranged wheel, a propeller-wheel attached to the upper end of said shaft, an eccentrically-arranged pivoted hose-clamp, and an eccentric carried by the opposite side of said vertically-arranged wheel and connected to the said hose-clamp, substantially as described.

10. A sprinkler comprising a supporting-frame, a rotatable frame supported thereby, a propeller-wheel carried by the rotatable member, an intermediate pivoted hose-clamp, and means operated by the propeller-wheel for revolving the rotatable member and oscillating said hose-clamp, substantially as described.

11. A sprinkler comprising an annular supporting-frame, a rotatable member supported thereby, a centrally-located propeller-wheel carried by the said rotatable member, means

operated by the said wheel for engaging the inner periphery of the stationary member and rotating the revoluble member, an intermediately-pivoted hose-clamp carried by
5 the revoluble member, and means operated by the propeller-wheel for oscillating said hose-clamp, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HOWARD H. GRAY.

Witnesses:

ISRAEL H. HEASTON,
CLAUDE CLINE.