(No Model.)

J. H. LAYMAN.

WATER SPRINKLER.

No. 428,113. Patented May 20, 1890.

FIG. 1.

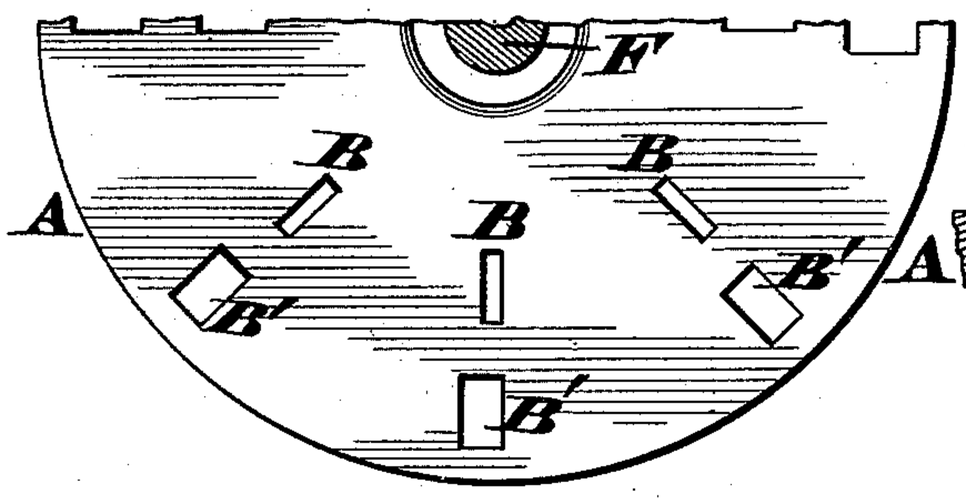


FIG. 3.

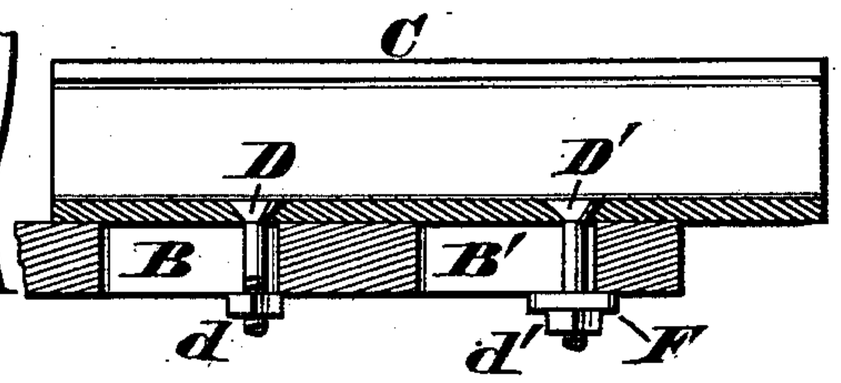


FIG. 4.

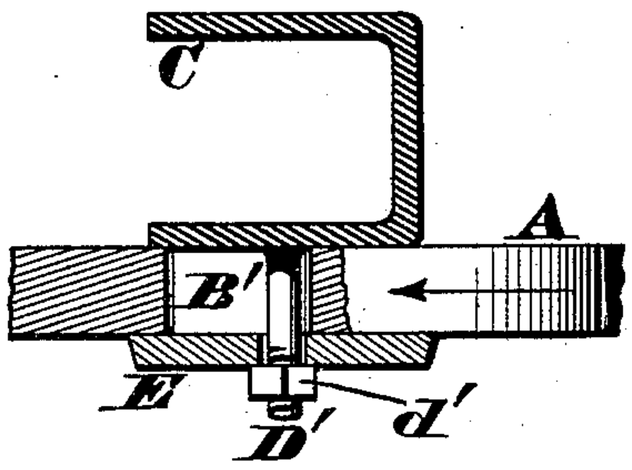


FIG. 2.

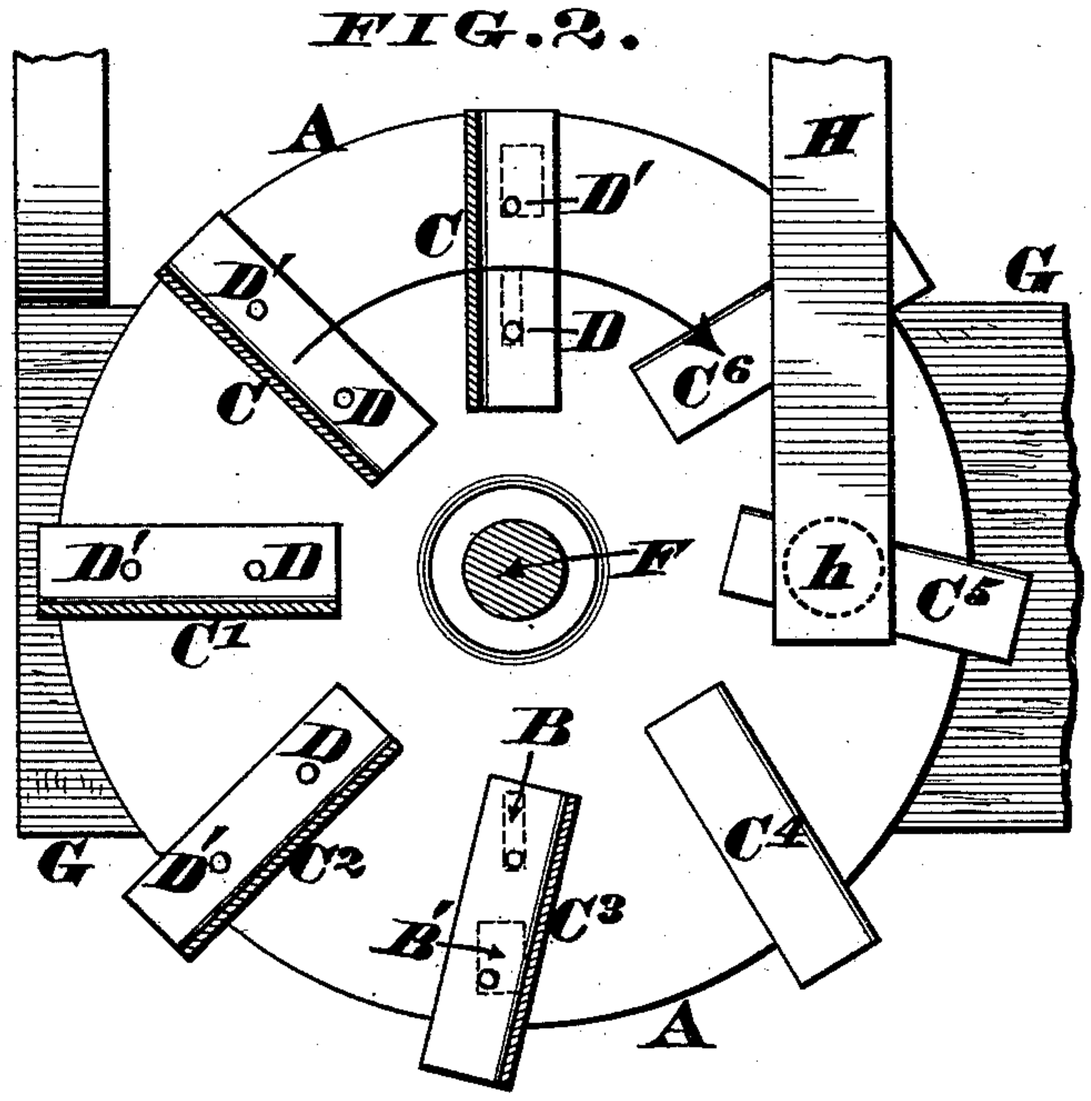


FIG. 5.

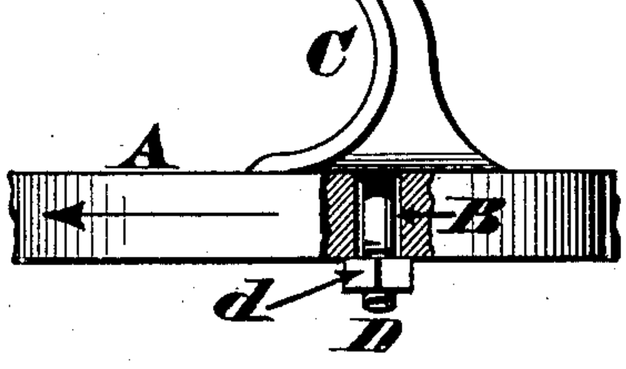


FIG. 6.

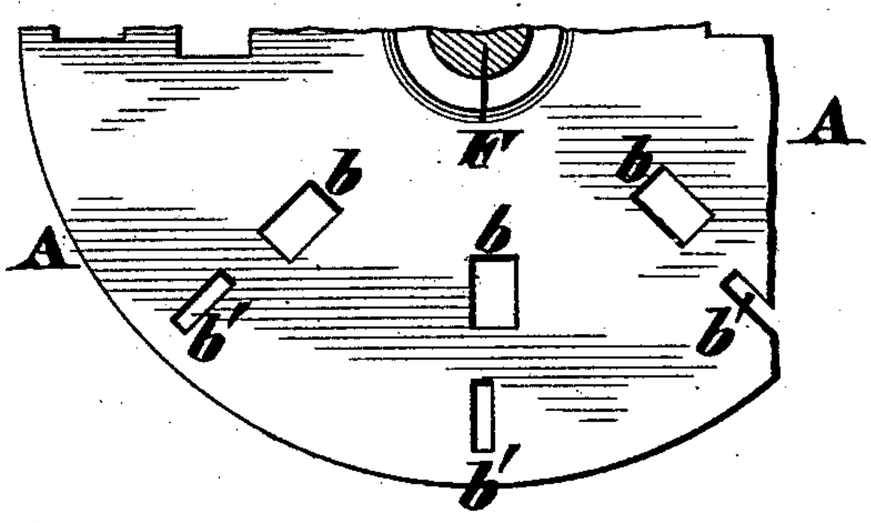
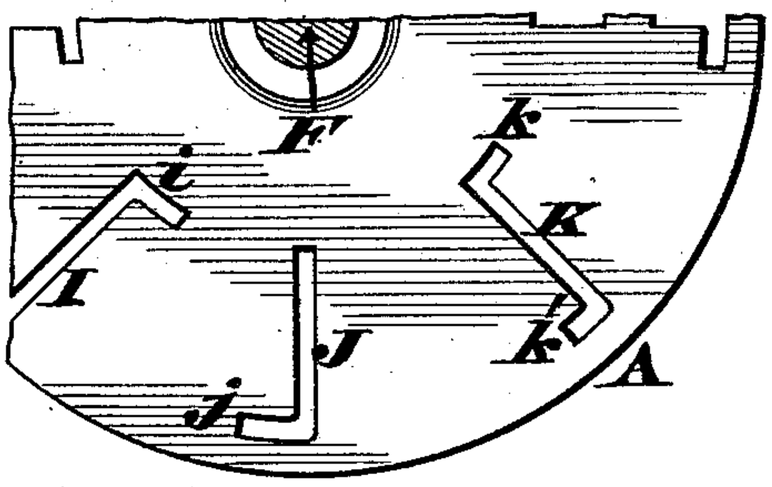


FIG. 7.



Attest.
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UNITED STATES PATENT OFFICE.

JAMES H. LAYMAN, OF CINCINNATI, OHIO, ASSIGNOR TO HENRY G. STIEBEL, OF SAME PLACE.

WATER-SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 428,113, dated May 20, 1890.

Application filed March 3, 1890. Serial No. 342,332. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. LAYMAN, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Water-Sprinklers; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the annexed drawings, which form a part of this specification.

This invention comprises certain improvements on the centrifugal water-sprinkler seen in Letters Patent No. 421,729, issued February 18, 1890, to Henry G. Stiebel as the assignee of William S. Kisinger, which patent shows concave vanes or buckets adjustably secured within guides fixed to the revolving plate or disk; but in the present case the guides are dispensed with and the adjustment is effected by suitably slotting the disk and attaching the vanes or buckets by bolts or similar fasteners that traverse said slots, as hereinafter described.

My invention further consists in so arranging these slofs as to permit the concave vanes to be shifted laterally, either at their outer or inner ends, or at each end, for the purpose of setting the vanes to tangents of a circle of considerable less diameter than the revolving disk, and thereby regulate the dispersion of the water, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a plan of one-half of the preferred form of disk used with my improved water-sprinkler. Fig. 2 is a plan of the complete sprinkler, a number of the concave vanes or buckets being sectioned horizontally and arranged both radially and tangentially upon the plate or disk. Fig. 3 is an enlarged vertical section of the disk and one of the concave vanes, said section being taken longitudinally of the slots in said disk. Figs. 4 and 5 are sections taken transversely of two modified forms of the vanes. Figs. 6 and 7 are plans of portions of two modified forms of the slotted disk.

Referring to Fig. 1, A represents a plate or disk of the proper size for a water-sprinkler to be applied to an ordinary wagon or cart, and B B′ are radial slots in said disk, the outer circle of slots B′ being somewhat wider than the inner circle B.

C are trough-shaped or concave vanes or buckets, usually of sheet metal, although not limited to that material, and having inner or pivot bolts D and outer bolts D′, which bolts traverse the slots B B′ and have nuts *d d′* screwed to their lower ends, as seen in Fig. 3.

E is a washer or bar placed across the wide slot B′, one washer being employed for each of said slots.

F is a driving-shaft secured to the disk A, the lower end of said shaft being journaled in a suitable step or bearing of the platform G, while its upper end has geared connections with the ground wheels of the cart, wagon, or other vehicle to which the sprinkler is applied.

H is a pipe or other conductor for leading water from the barrel or tank of the wagon to the sprinkler, the under side of said conductor being provided with a discharge ventage or nozzle, as indicated by the dotted circle *h*. The water that escapes from this ventage falls directly upon the rapidly-revolving disk A and is instantly scooped up by the concave vanes C, which throw the fluid to a considerable distance in finely-divided jets or spray, said disk being run in the direction indicated by the arrow. If the water is to be thrown but a limited distance, the vanes need not project beyond the edge of the disk, as seen at C C, and by simply shifting the vanes outwardly the distance to which the water can be thrown will be regulated accordingly. The vane C′ is set out a little farther than the vane C, and the vane C^2 a little farther than vane C′. Furthermore, the vane C^3 is set out the same distance as vane C^2, but is adjusted tangentially upon the disk A, while the vanes C, C, C′, and C^2 are arranged radially thereon. The other vanes C^4, C^5, and C^6 are arranged tangentially, the same as the vane C^3. This tangential adjustment is readily effected by unslackening the nuts *d′* and swinging the vanes to the left, the bolts D serving as pivots, while the other bolts D′ are traversing the slots B′, after which act said nuts are tightened, so as to hold the vanes securely in place. It is evident the pitch or angle of the vanes will depend upon the position of the bolts D′ within the slots B′, but for a simple radial adjustment the bolts D D′ are slipped

either directly back or forth within their respective slots B B′; but in Fig. 6 this arrangement is exactly reversed, the inner row of slots *b* being the widest, while the outer slots *b′* are comparatively narrow. Consequently the pivot-bolts in this case would occupy the outer slots *b′*, while the adjustable bolts would traverse the inner slots *b*.

Another modification is seen in Fig. 7, where a single radial slot I has at its inner end a lateral bend *i;* but J shows another radial slot with a lateral bend *j* at the outer end, while the slot K has a bend *k* at its inner end and a bend *k′* at its outer end. It is evident, however, that these modifications will not permit any tangential adjustment to be effected until the vanes have been so shifted as to bring the proper bolts in line with the lateral bends of the slots. Finally, in Fig. 4, the vane or bucket takes the shape of a three-sided rectangular trough, while in Fig. 5 the vane is a semicircular tube.

I claim as my invention—

1. A centrifugal sprinkler consisting of a plate or disk whose upper surface is provided with a series of laterally-adjustable concave vanes or buckets, which buckets are open at their outer ends and have their concave sides presented in the direction said disk turns, substantially as herein described, and for the purpose stated.

2. A centrifugal sprinkler consisting of the plate or disk A, having a series of narrow slots B and wider slots B′, in combination with a series of concave vanes or buckets C, each vane being provided with a pair of bolts D D′, that traverse said slots, for the purpose described.

3. A centrifugal sprinkler consisting of a plate or disk whose upper surface is provided with a series of longitudinally and laterally adjustable concave vanes or buckets, which buckets are open at their outer ends and have their concave sides presented in the direction said disk turns, substantially as herein described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES H. LAYMAN.

Witnesses:

FRANCIS M. BIDDLE,

A. W. MCCORMICK.