F. C. ANDERSON.

SPOUT FOR WATER COLUMNS.

APPLICATION FILED AUG. 21, 1909.

969,321.

Patented Sept. 6, 1910.

Fig. 1

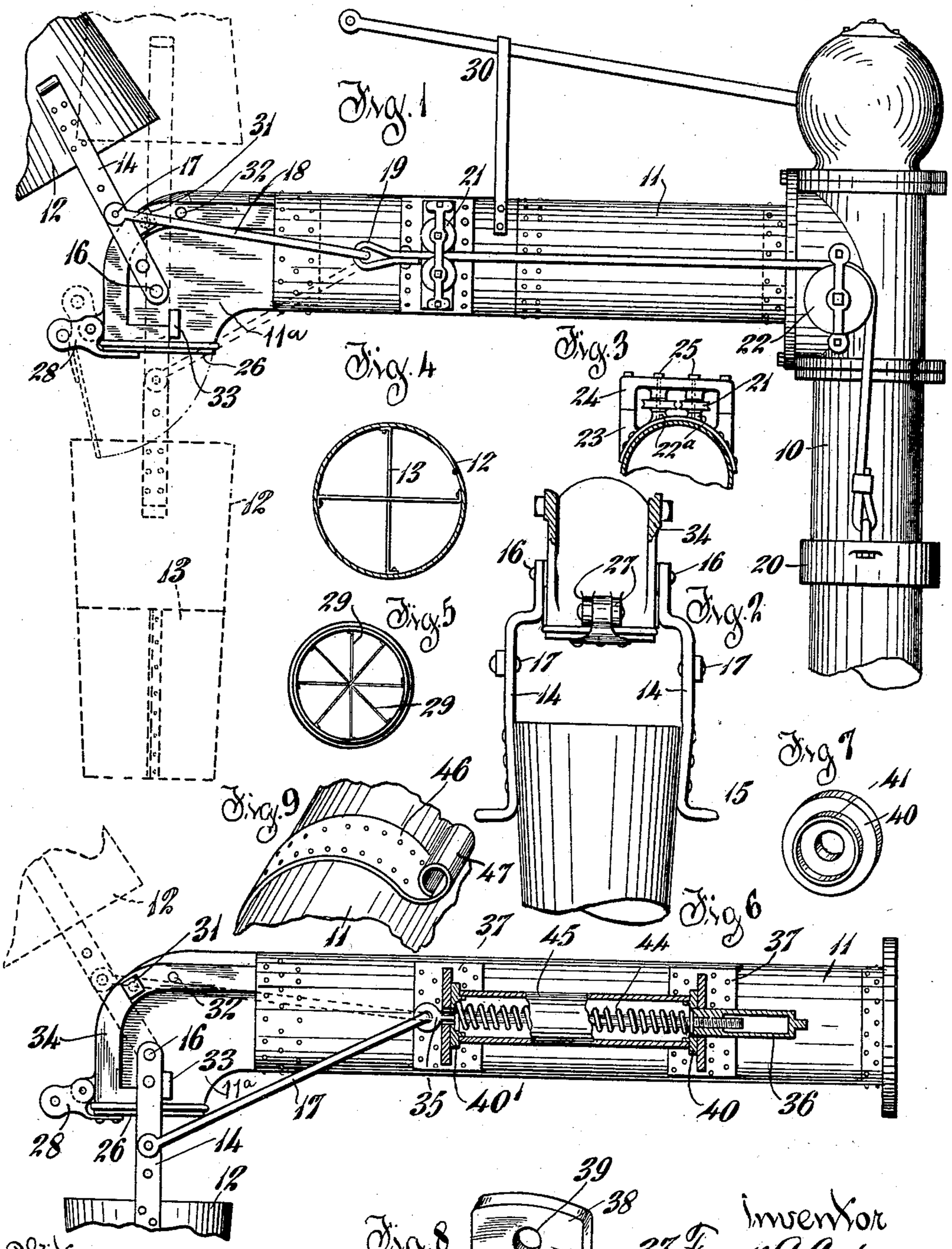


Fig. 4

Fig. 3

Fig. 5

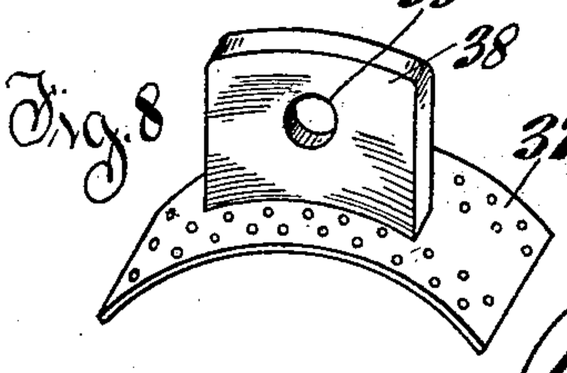
Fig. 2

Fig. 7

Fig. 9

Fig. 6

Fig. 8



Witnesses

Oliver W. Harmon

Florence Hammel

Inventor

Frank C. Anderson

By James L. Ramsey

Attorney

UNITED STATES PATENT OFFICE.

FRANK C. ANDERSON, OF CINCINNATI, OHIO, ASSIGNOR TO AMERICAN VALVE & METER COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF WEST VIRGINIA.

SPOUT FOR WATER-COLUMNS.

969,321. Specification of Letters Patent. **Patented Sept. 6, 1910.**

Application filed August 21, 1909. Serial No. 513,907.

To all whom it may concern:

Be it known that I, FRANK C. ANDERSON, 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 Spouts for Water-Columns, of which the following is a specification.

My invention relates to improvements in spouts for water columns used for supplying railway engines with water, and more particularly to means whereby the spout is lengthened when said spout is considerable distance higher than the tender of the locomotive.

The old method of fastening funnels or boot-legs to the end of the water spout to lengthen the downward portion of the spout in order to put the water in tenders of various heights without waste has many disadvantages. The method consists of fastening funnels or boot-legs to the end of the spouts with a chain, or if canvas or leather is used they are fastened rigidly to the end of the spout, but in either case in swinging the spout to and from the tender in taking water the hanging funnels or boot-legs have to be dragged over the coal pile of the tender to their proper position. In doing this the hanging funnels or boot-legs are destroyed in a very short time and become detached from the spout, thus causing considerable care and expense in keeping them in repair and attached to the spout.

With my improvements for operating the funnels or extensions in combination with a spout to take water when the tenders are at various heights, I provide very simple and convenient mechanism to operate said funnels or extensions in order that they may be used without being dragged over the coal pile of a tender whereby they are put out of service, and at the same time my improvements do not affect the operation of the water column in any way. My improved funnel or extension being supplied with partitions forming what is termed anti-splashers, causes the water to pass from the funnel or extension in a straight line fully twenty-four inches from its lower end, and in this way I am able to drop the water from the lower end of the discharge nozzle fully five feet to the tender of the locomotive without any waste whatever.

The object of my invention is to provide means whereby my improved water funnel, as it may be called, is automatically retained in a position above the water spout and entirely out of the way of the coal pile of the tender while being swung to or from its normal position over said tender.

My invention consists in a funnel shaped extension provided with partitions, arms extending upward from said funnel shaped extension and pivoted on the end of the water spout, arms fastened to said arms on the funnel shaped extension and at the other end to a cable which is guided by rollers placed in a suitable manner on the sides of said water spout and weighted at the end.

My invention also consists in other certain parts and combination of parts as will hereinafter be pointed out.

In the drawing: Figure 1 is a side view of a portion of a water column and water spout embodying my invention, part of the funnel shaped extension being broken away. Fig. 2 is an end elevation of the water spout equipped with my invention. Fig. 3 is a detail view of the rollers and brackets supporting same, through which the weighted cable moves. Fig. 4 is a cross sectional view taken through my improved funnel shaped extension. Fig. 5 is a view looking into the end of the water spout, showing its partitions. Fig. 6 shows a modification of my invention. Fig. 7 is a detail view of a plate employed in the modification shown in Fig. 6. Fig. 8 is a detail view on a slightly enlarged scale of the bracket fastened to the water spout shown in Fig. 6. Fig. 9 is a modification of a bracket which may be used instead of the bracket shown in Fig. 8.

Referring more particularly to the drawing, 10 indicates a water column having a water spout 11 fastened thereto in the usual manner, the discharge nozzle 11ª being of a new design and special construction. A funnel shaped extension 12 provided on its interior with partitions 13 and supported by arms 14 fastened thereto is pivotally mounted upon discharge nozzle 11ª, said arms being bent out at their lower ends to form handles 15 and being pivoted at the

other end at 16 to the discharge nozzle 11ª. Pivoted at 17 I show an arm 18 which is fastened at its other end to a tension member or cable 19, said cable 19 having a weight 20 fastened at its lower end. The cable 19 is guided along the side of the spout 11 by rollers 21 and along the column 10 by roller 22. The rollers 21 are fastened to the side of the spout, as best shown in Fig. 3, where it is seen that I provide a bracket 23 having extensions attached thereto. The two middle sections 22ª are adapted to form bearings for the rollers 21. I also provide a plate 24 which is clamped down to bracket 23. Bolts 25 form a shaft for the rollers 21. I fasten the roller 22 in practically the same manner as I do the rollers 21.

At 26 I show a cover for the opening of the discharge nozzle 11ª. The cover 26 is fastened to the end of the discharge nozzle by means of lugs 27 which are placed upon the end of the discharge nozzle 11ª. The lid or cover 26 has at one end a weighted arm 28, the weight on said arm serving as a means of holding the cover 26 closed or against the end of the discharge nozzle 11ª.

The purpose of the partitions 29 in the end of the nozzle shown in Fig. 5 is to straighten the course of the water coming from the spout 11. The water as it comes from the ground passes through the spout in a whirl, and it has been found that by placing the partitions 29 in the end of said discharge nozzle that it will cause the water to enter the funnel in a straight course. I also provide the partitions 13 in the funnel 12 for the same purpose.

The operation of my invention is as follows: When the engineer desires to take water and has his locomotive placed under the spout ready to receive said water, he takes hold of one of the handles 15 and lowers the funnel to its lower position which is directly beneath the opening of the spout. It is seen that when the funnel is in its upper position that the weight 20 being attached to the end of the cable 19 and the other end of the cable 19 being fastened to the arm 18, said arm in turn being fastened to the arm 14 of the funnel, that said funnel will remain in this position until it is desired to lower it. Of course, the weight 20 is of sufficient weight to balance the funnel 12. As soon as the engineer has lowered the funnel his next move is to open the valve by the usual method shown at 30. It is apparent that the funnel 12 will remain in its lowermost position for the same reason that it remains in its upper position until it is desired to raise it. I have shown in dotted lines the funnel 12 in its lowermost position, and I have also shown in dotted lines the lid or cover 26 as it appears when it is open. The lid or cover 26 is opened and held opened by the pressure of the water coming from the spout 11. It is apparent that when the water ceases to flow that the weight 28 will close the lid or cover 26 by gravity. The cover 26 may or may not be used, as desired. However, it may be found very convenient in severe weather to close the discharge nozzle of the spout, preventing the wind from blowing through the spout into the column, thus causing to freeze any water that may be retained therein. I preferably provide stop 31 for adjusting the funnel 12 at any desirable angle when it is in its normal position. Said stop 31 is provided with an extension which fits into holes 32 in the ribs or flanges 34 on the side of the discharge nozzle 11ª. There may be as many holes as desired. My chief reason for the funnel being at the angle shown is to eliminate the danger of allowing the drainage to fall on the end of the discharge nozzle 11ª and freeze and render the mechanism of the discharge nozzle inoperative. I provide a stop 33 for limiting the movement of the funnel downwardly, said stop 33 being fastened to the side of the discharge nozzle 11ª. I have also shown in dotted lines the funnel 12 in its vertical position above the spout, but, however, the position shown in full lines is preferable. At the end of the spout 11 on the nozzle 11ª I provide ribs or bearing surfaces 34 as guides for the arms 14, thus reducing the friction which would be caused if the arms engaged the full of the sides of the nozzle point. These ribs are placed on the sides of the discharge nozzle 11ª.

Referring more particularly to the modification shown in Fig. 6, I provide the same funnel 12, the same arm 14, also the same arm 18 and practically the whole end of the spout 11 is the same as that shown in Fig. 1. The end of the arm 18 in this case is fastened to a bar 35 instead of the cable 19. The rod or bar 35 is threaded at one end and is attached to a round cylindrical member 36 partly threaded and which is provided with an opening between its ends to permit the adjustment of the spring 44 when desired. I also provide brackets 37 fastened on the sides of the spout 11, said brackets having extensions 38 and a hole 39 to receive the member 36 and the bar 35, respectively. At 40 and 40′ I show a small round plate provided with annular extensions 41. The plate 40 also has a suitable opening to receive the pin or bar 35, while the plate 40′ has a suitable opening to receive the member 36. To protect the spring 44 from the weather, I provide a pipe 45 which is adapted to fit snugly around the annular extensions 41 on the plates 40 and 40′. Preferably the spring 44 is adapted to engage an annular recess in the plate 40′ and a similar recess in the member 36, and is thereby held in place. It is seen that by using this modification I dispense entirely

with the weight 20 and cable 19 shown in Fig. 1, the whole device being fastened upon the spout 11. The operation of this device is as follows: The funnel 12 is either held in the upper position or the lower position, as desired, by means of the spring 44. The bar 35 being fastened securely to the member 36, and the member 36 being adapted to slide easily through the member 37 fastened upon the spout, a slight outward movement of the rod or bar 35 will compress the spring 44 because said spring 44 is resting against the adjustable member 36, the plate 40′ in turn resting against the bracket 37. To adjust the tension of the spring 44, the member 36 is threaded to engage the end of the rod 35 so that the distance between the member 36 and the plate 40′ may be regulated.

Referring more particularly to Fig. 9, I show in this view a strip of metal 46 riveted to the side of the spout 11. This strip of metal 46 is a substitute bracket for the bracket 37 shown in Fig. 6. It is seen bent up at the ends to form supports 47 for the rod 35 and member 36. This strip of metal 46 may be of one piece and extend half way around the pipe 11 in order to make supports diametrically opposite for the rods 35 and members 36. Thus it is observed that this may be a cheaper way to construct a bracket upon the pipe 11, but, the bracket shown in Fig. 6 is preferable.

With my improvements a column can be erected with the spout high enough for the discharge nozzle to clear the coal pile of the highest tenders, and will also reduce the chances of knocking down the column to a minimum in case the engine should start before the spout has been pushed clear of the tender to its normal position after taking water.

Many modifications may be made without departing from the spirit and scope of my invention, and I do not wish to be confined to the exact details shown.

What I claim as new and desire to secure by Letters Patent is:

1. A device of the character described comprising a water column, a water spout, an extension for said water spout secured thereto by pivots on the sides of the spout, means for adjusting said extension on said pivots to various angles relative to said spout, means to automatically hold said extension at various angles out of operative position, and means for discharging the water through said extension, when desired, substantially as set forth.

2. A device of the character described comprising a water spout, an extension, arms fastened thereto and pivoted to the discharge portion of the water spout, said water spout connected to a water column, a weighted cable, arms pivoted to the arms on the extension at one end and to said weighted cable at the other, and brackets fastened to the sides of the water spout carrying guides for said weighted cables, substantially as and for the purposes set forth.

3. A device of the character described comprising a water spout, an extension thereon, arms fastened thereto and pivoted to the end of the water spout, a weighted cable, arms pivoted to the arms of said extension at one end and fastened to said weighted cable at the other, suitable guides on the side of said water spout through which said weighted cable passes, adjustable stops adapted to limit the movement of said extension, and partitions in said extension, substantially as and for the purposes set forth.

4. A device of the character described comprising a water spout, a funnel shaped extension, arms fastened thereto, and pivoted to the discharge portion of the water spout, said water spout connected to a water column, a weighted cable, arms pivoted to the arms on the funnel shaped spout at one end and to said weighted cable at the other, and brackets fastened to the sides of the water spout carrying guides for said weighted cable, substantially as and for the purposes set forth.

5. A device of the character described comprising a water spout, a funnel shaped extension, arms fastened thereto and pivoted to the end of a water spout, a weighted cable, arms pivoted to the arms of said funnel shaped extension at one end and fastened to said weighted cable at the other, suitable guides on the side of said water spout through which said weighted cable passes, adjustable stops adapted to limit the movement of said funnel shaped extension, and partitions in said funnel shaped extension, substantially as and for the purposes set forth.

6. A device of the character described comprising a water spout, a weighted cable guided by rollers fastened to the sides of the water spout and water column and fastened at one end to arms, a funnel shaped extension, said arms pivoted to arms on said funnel shaped extension and in such a place as to allow said arms on the funnel shaped extension to swing on their pivots at the end of the water spout, stops regulating the limit of movement of the funnel shaped extension, said stops being detachable and adjustable, ribs provided on the sides of the discharge nozzle of the water spout forming bearing surfaces for said arms of the funnel shaped extension, and partitions placed in the funnel shaped extension, substantially as set forth.

7. A device of the character described comprising a water column, a water spout attached thereto, a discharge nozzle attached to said water spout, a weighted cover

pivoted at the end and on the outside of said discharge nozzle and being adapted to be opened by the water passing therethrough, said cover being weighted in such a manner as to automatically close and remain closed when the spout is not in use, substantially as set forth.

8. A device of the character described comprising a water column, a water spout, an extension for said water spout secured thereto by a pivot, means for adjusting said extension on said pivot toward and away from said water column to different angles relative to said spout, means for limiting the movement of said extension, and means to automatically hold said extension at a predetermined angle relative to said spout.

9. In a device of the character described, a water column, a water spout, a discharge nozzle for said water spout, an extension for said discharge nozzle, a fixed lower stop and an adjustable upper stop to limit the movement of said extension, partitions in said nozzle and in said extension to direct the water in a straight course and prevent splashing, and a weighted door or cover for said nozzle adapted to automatically open and close, substantially as and for the purposes set forth.

10. In a device of the character described, a water column, a water spout, a discharge nozzle for said water spout, an extension for said discharge nozzle, a fixed lower stop and an adjustable upper stop to limit the movement of said extension, and a weighted door or cover for said nozzle adapted to automatically open and close, substantially as and for the purposes set forth.

11. In a device of the character described, a water column, a water spout, a discharge nozzle, an extension for said discharge nozzle, an adjustable arm secured to said extension and pivoted to said discharge nozzle, a tension member, an arm connected to said tension member at one end and adapted to be adjustably connected at its other end to the arm secured to said extension.

12. In a device of the character described, a water column, a water spout, a discharge nozzle, an extension for said discharge nozzle, an arm secured to said extension and pivoted to said discharge nozzle, a tension member, an arm connected to said tension member at one end and adapted to be adjustably connected at its other end to the arm secured to said extension.

13. In a device of the character described, a water column, a water spout, a discharge nozzle, an extension for said discharge nozzle, an adjustable arm secured to said extension and pivoted to said discharge nozzle, a tension member, an arm connected to said tension member at one end and adapted to be connected at its other end to the arm secured to said extension.

FRANK C. ANDERSON.

Witnesses:

JAMES N. RAMSEY,

FLORENCE HAMMEL.