Dec. 15, 1925. 1,565,407

J. BESSON

SPRINKLING TROUGH

Filed Feb. 15, 1924 2 Sheets-Sheet 1

Fig. 2.

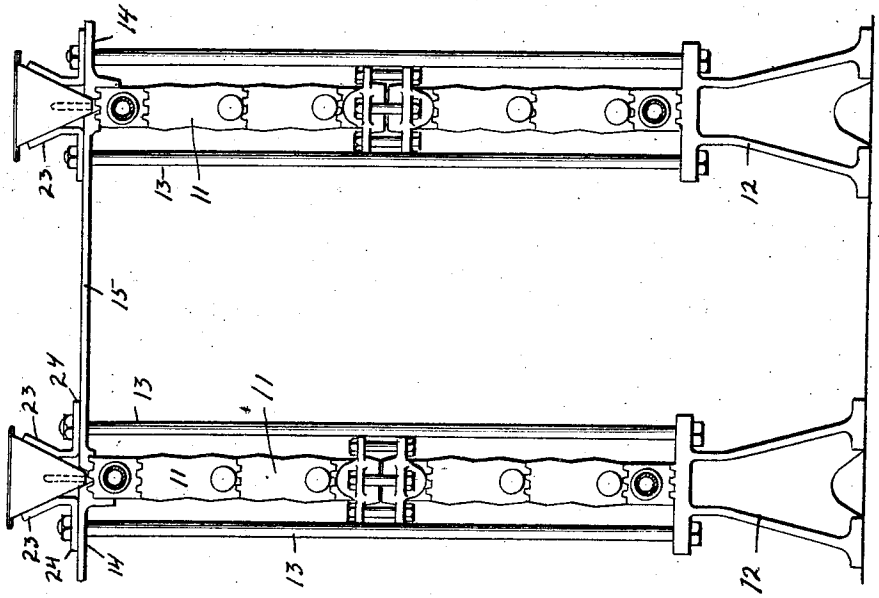
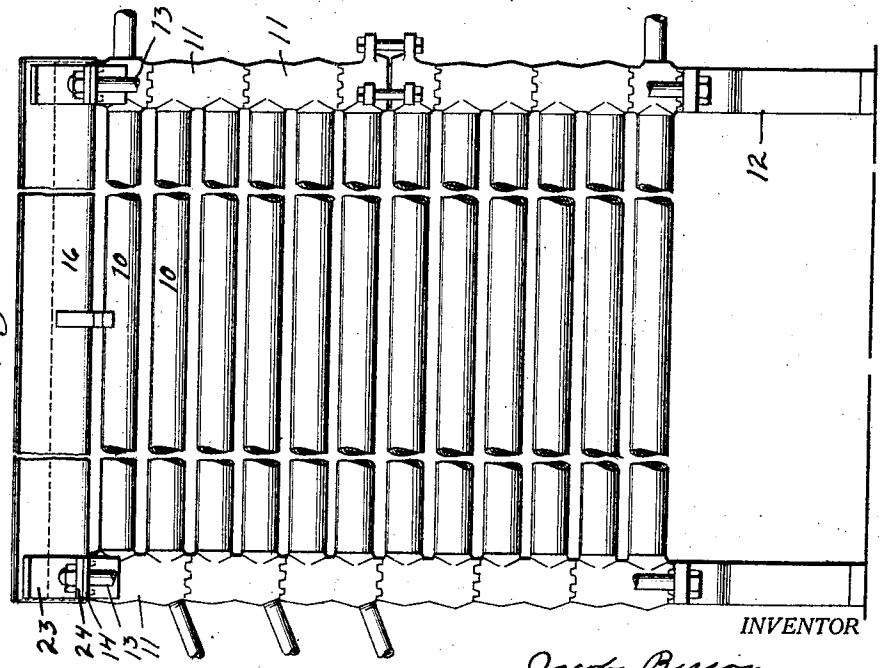


Fig. 1.



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Filed Feb. 15, 1924 2 Sheets-Sheet 2

Fig. 3.

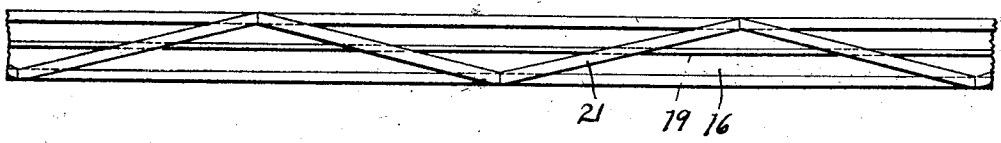


Fig. 4.

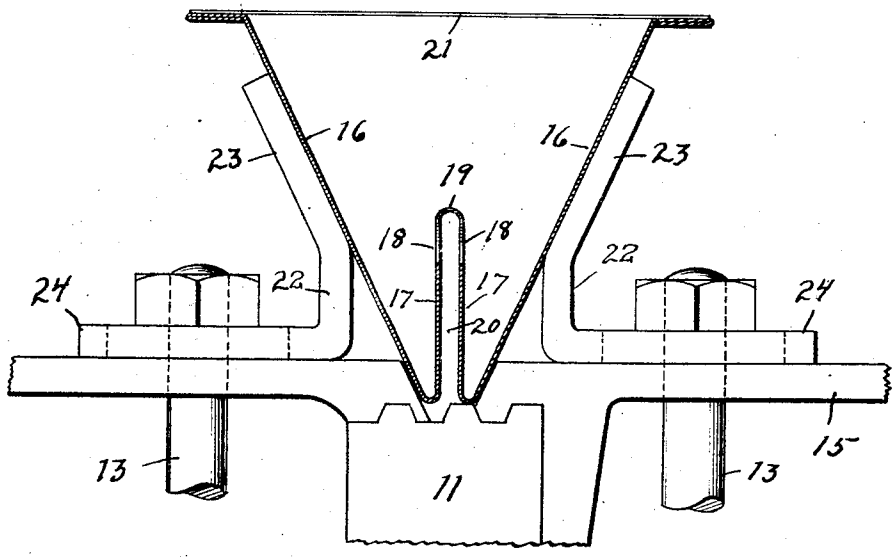
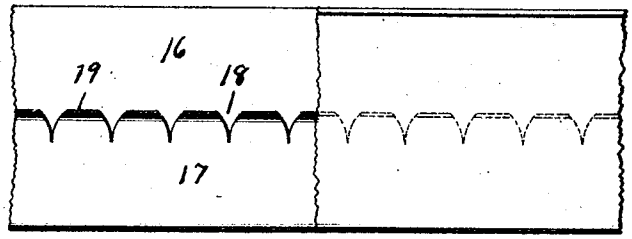


Fig. 5.



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UNITED STATES PATENT OFFICE.

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SPRINKLING TROUGH.

Application filed February 15, 1924. Serial No. 693,005.

To all whom it may concern:

Be it known that I, JACOB BESSON, a citizen of the United States, and resident of Carbondale, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Sprinkling Troughs, of which the following is a specification.

This invention is an improvement in sprinkling troughs for atmospheric condensers or coolers, or for any other apparatus where a sprinkling trough may be practicable.

One object of my invention is to secure increased rigidity of the trough whereby I am able to avoid the necessity for a separate rigid supporting member.

A further object is to secure a centralized delivery rather than a side delivery whereby greater efficiency is secured.

A further object is to confine water leaving the trough and direct it to the parts to be cooled so that all of the delivered water is efficiently utilized whether the rate of delivery be high or low.

A further object is to secure the delivery of the water along spaced vertical surfaces which may be positioned upon opposite sides of the vertical plane of the axis of the pipe to be cooled, whereby downflow of the water over both sides of the pipe is insured.

A further object is to provide an improved form of trough support whereby the trough may be raised or lowered at either end to secure uniform distribution of the water along the length thereof and without the use of set screws, brackets or other parts directly connected to the trough.

A further object is to provide a simple, inexpensive construction for securing each and all of the objects above referred to.

In the accompanying drawings I have illustrated one embodiment of my invention. In these drawings:

Fig. 1 is a side elevation of a condenser provided with my improved sprinkling trough.

Fig. 2 is an end view thereof.

Fig. 3 is a top plan view of a portion of the trough.

Fig. 4 is a vertical transverse section through the trough, on a larger scale, and

Fig. 5 is a vertical central longitudinal section of a portion of the trough but on a smaller scale than Fig. 4

I have illustrated my invention as applied to a condenser of the zig zag conduit type in which the spaced superposed pipes 10 are connected by return bends 11. These return bends are so formed that they rest one directly upon the other with the lower bends resting upon foot stands 12. The several return bends are connected by tie bolts 13 which extend from flanges on the foot stands to brackets 14 engaging with the upper surfaces of the upper bends. If a plurality of the units be employed as shown in Fig. 2, their upper ends may be spaced and connected by a brace 15 which may receive the tie bolts of both units and replace a pair of brackets 14.

My improved sprinkling trough is preferably formed of sheet metal with oppositely disposed downwardly converging side walls 16 which are spaced apart at their lower edges and are integral with the upwardly extending side walls 17 of a longitudinally extending substantially vertical partition within the trough. In other words the trough is of substantially double V form with the inner sides of the two V sections constituting the side walls of the central partition. All four walls may be integral, the two partition walls 17 being connected at their upper edges.

The partition is provided with a row of spaced outlet openings 18 for the water. These may be of any desired form, but are preferably of substantially V shape with curved side edges approaching tangency at the lower ends, as shown in Fig. 5. The openings in one side wall of the partition may be and preferably are united with the openings in the opposite side wall of the partition. In other words the openings are formed in the bend 19 which connects these partition walls and extend downwardly the proper distance along said partition walls. The water in the trough is thus maintained in two separate bodies upon opposite sides of the central partition and is delivered to the space or passage 20 within the partition from both sides thereof. These partition walls are spaced apart at their lower edges and the trough may be so positioned that these lower edges come upon opposite sides

of the center line of the upper pipe 10 and the condenser whereby water flowing down these partitioned walls is delivered to the pipe so as to flow over the opposite sides of the latter. If the rate of delivery of the water be comparatively high the water level may rise above the top of the partition, but in any event the side walls confine the streams or jets which flow out through the openings 18 and direct all of the water downwardly rather than permitting it to be projected out into the air and fall beyond the surface of the parts to be cooled, as is the case where the water escapes outwardly from openings in the outer side walls of the usual V shape trough. The partition thus not only directs all of the water downwardly, but insures efficient action on the parts to be cooled.

The partition also serves as a strengthening or reinforcing member and gives the trough greater rigidity. The upper edges of the side walls 16 of the trough may be connected by diagonal braces 21 as shown in Fig. 3 which prevent any lateral bending of the trough and maintain the lower open end of the passage 20 directly above the upper pipe of the condenser.

For supporting and adjusting the trough I provide a pair of brackets 22 having upwardly extending diverging arms 23 for engaging with the side walls of the trough. These brackets may be adjusted toward and from each other to thereby effect a raising or lowering of either end of the trough. As shown, each bracket has a base portion 24 resting directly upon a bracket 14 or a connecting brace 15 and is slotted to receive the upper end of the tie bolt 13. By loosening the nut on the upper end of the tie bolt the corresponding bracket may be moved toward or away from the trough to thereby raise or lower the latter. The trough may be readily removed at any time from the V shape support formed by the two brackets as these brackets are not directly connected to the trough. Furthermore by adjusting the two brackets the trough may be moved laterally in either direction without raising or lowering it, and thus bring the lower edge of the passage 20 directly over the upper pipe. The same tie bolts which form a part of the clamping means of the condenser itself serve for holding the trough brackets in position. I thus avoid the necessity for any adjusting screws and provide simple, inexpensive means for adjusting the trough both vertically and laterally. As the passage 20 is fed from both sides it is more sensitive than a construction in which there is only a single row of outlet openings and the trough need not be filled to as high a level, and therefore need not support as much surplus water as is usually necessary. The trough even when operated at full capacity delivers all of its water directly to the tubes.

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

1. A sprinkling trough having an upwardly and longitudinally extending partition formed of a pair of walls spaced apart to form a water passage open along its lower edge, said partition having openings along the upper edge for the delivery of water from said trough downwardly through said passage.

2. A sprinkling trough having a central longitudinally extending partition formed of substantially parallel walls having openings along the upper edges thereof for the delivery of water from said trough downwardly between said walls and spaced at the lower edge for the escape of the water along substantially the entire length of the trough.

3. A sprinkling trough having downwardly converging side walls and an upwardly extending central partition lengthwise thereof and formed of spaced walls each having a row of openings along the upper edge thereof for the delivery of water to the space within said partition and said space being open along its lower edge.

4. A sprinkling trough formed of sheet metal with downwardly converging side walls and a central partition formed of spaced walls connected together at their upper ends and each connected to its corresponding side wall at the lower edge, said partition having outlet openings to the space between said partition walls and said space being open along its lower edge.

5. A sprinkling trough of substantially double V form with openings along the ridge connecting the upper edges of the inner side walls of the V sections.

6. A sprinkling trough of substantially V shape with a central partition formed of spaced walls, said trough having a row of openings along the upper edge of said partition for the delivery of water downwardly through the partition and a pair of brackets having upwardly and outwardly inclined surfaces for engaging with the side walls of the trough.

7. A sprinkling trough of substantially V shape in cross section and provided with an upwardly extending centrally disposed partition formed of spaced walls connected together at their upper edges and connected to the side walls of the trough at their lower edges, said partition having openings for the escape of water downwardly therethrough and a plurality of diagonal braces connecting the upper outer edges of the side walls of the trough.

8. A sprinkling trough of substantially V shape with a central partition formed of

spaced walls, said trough having a row of openings for the delivery of water to the space between said walls, and a pair of brackets having upwardly and outwardly inclined surfaces for engaging with the side walls of the trough.

9. A sprinkling trough made of sheet metal bent to form a pair of outer downwardly converging side walls and a pair of inner spaced walls, the two inner walls being connected together at their upper edges and connected at their lower edges to the lower edges of the outer walls to form a pair of V shape sections, the upper portion of one wall of each section having a row of openings along the length thereof for the escape of water and the downward flow thereof along said wall.

Signed at Carbondale, in the county of Lackawanna and State of Pennsylvania, this 7th day of February, A. D. 1924.

JACOB BESSON.