

July 12, 1938.

H. C. SEITZ

2,123,809

DEFLECTOR

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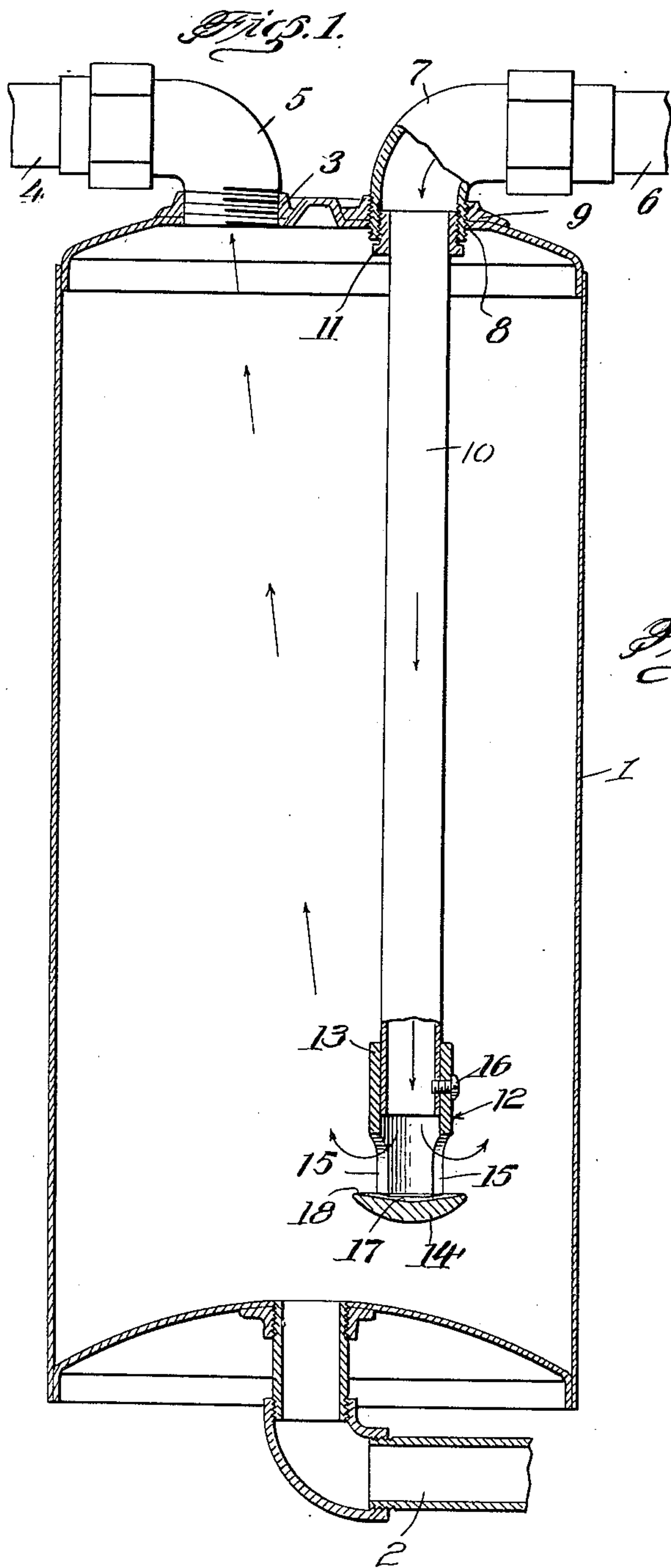


Fig. 2.

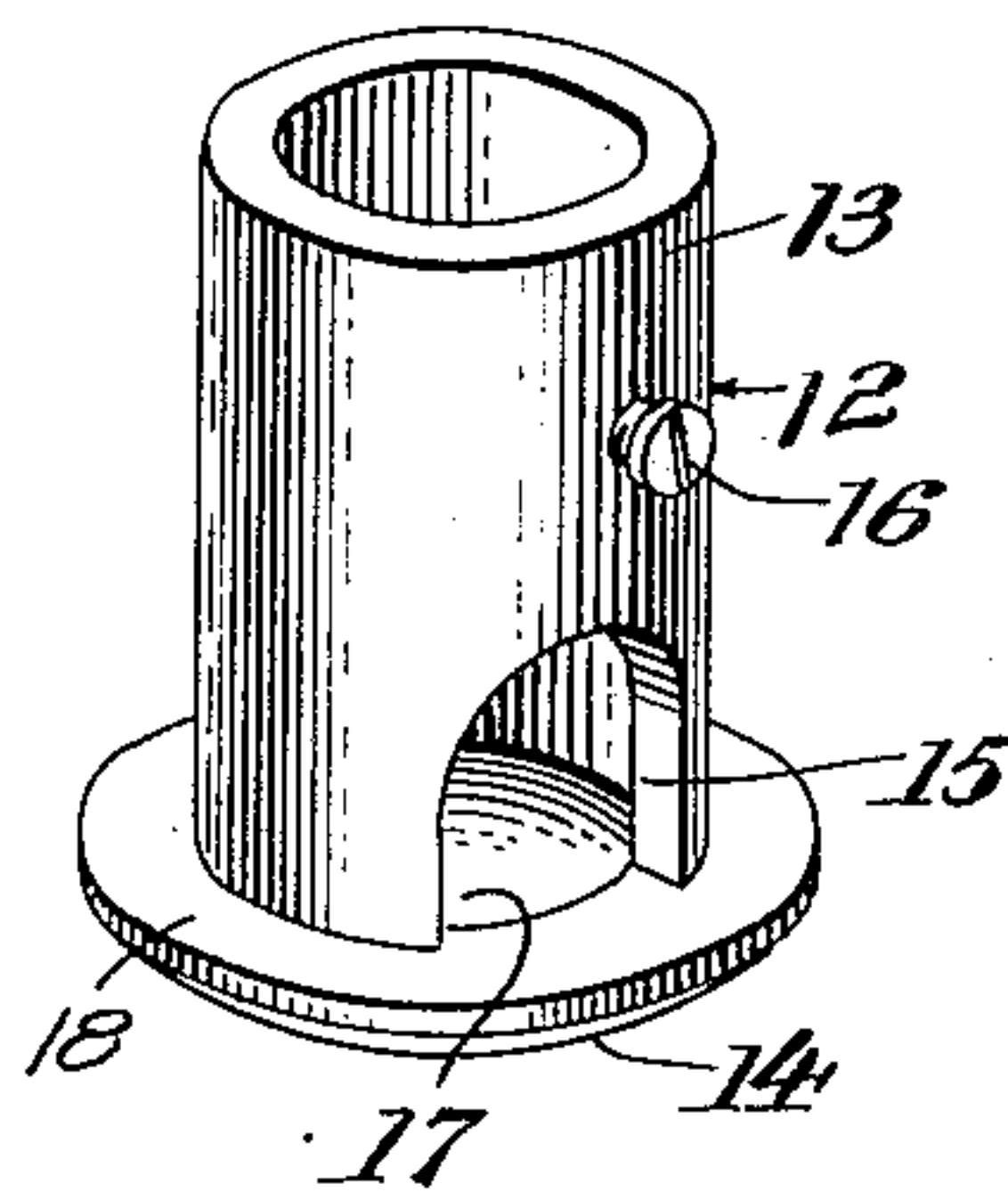


Fig. 4.

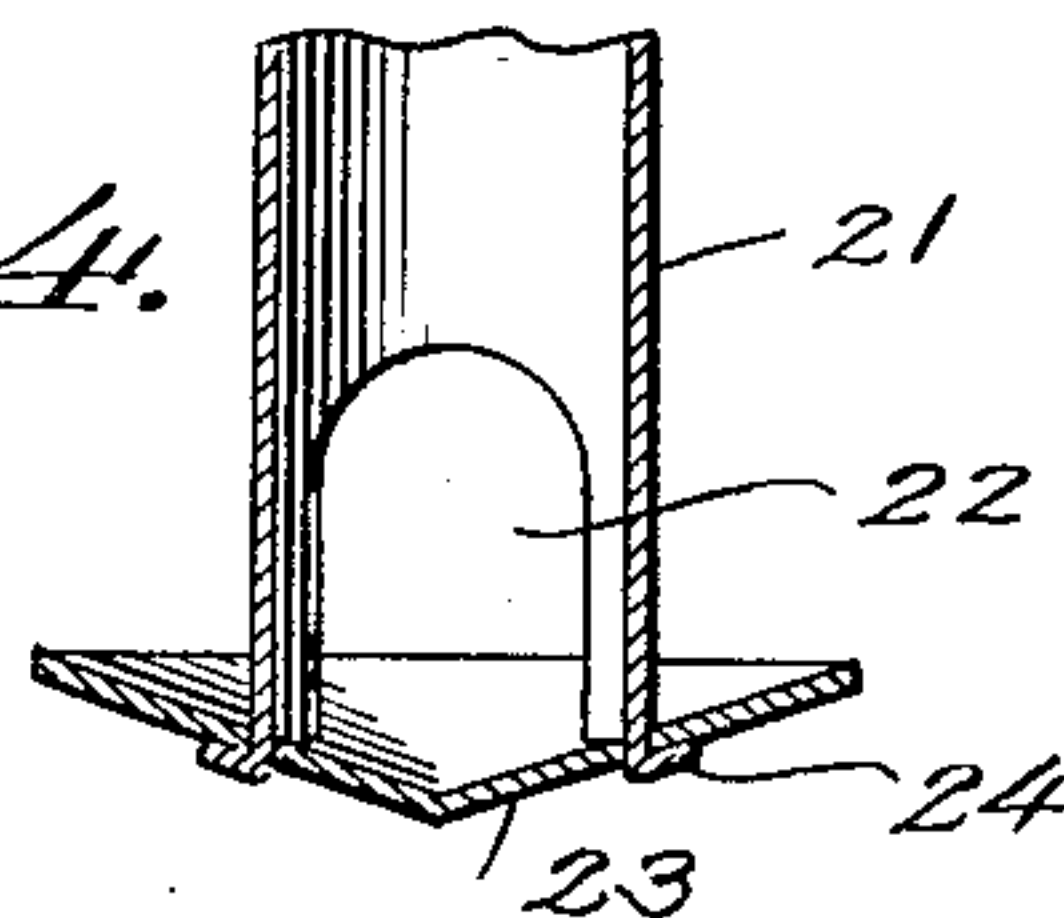
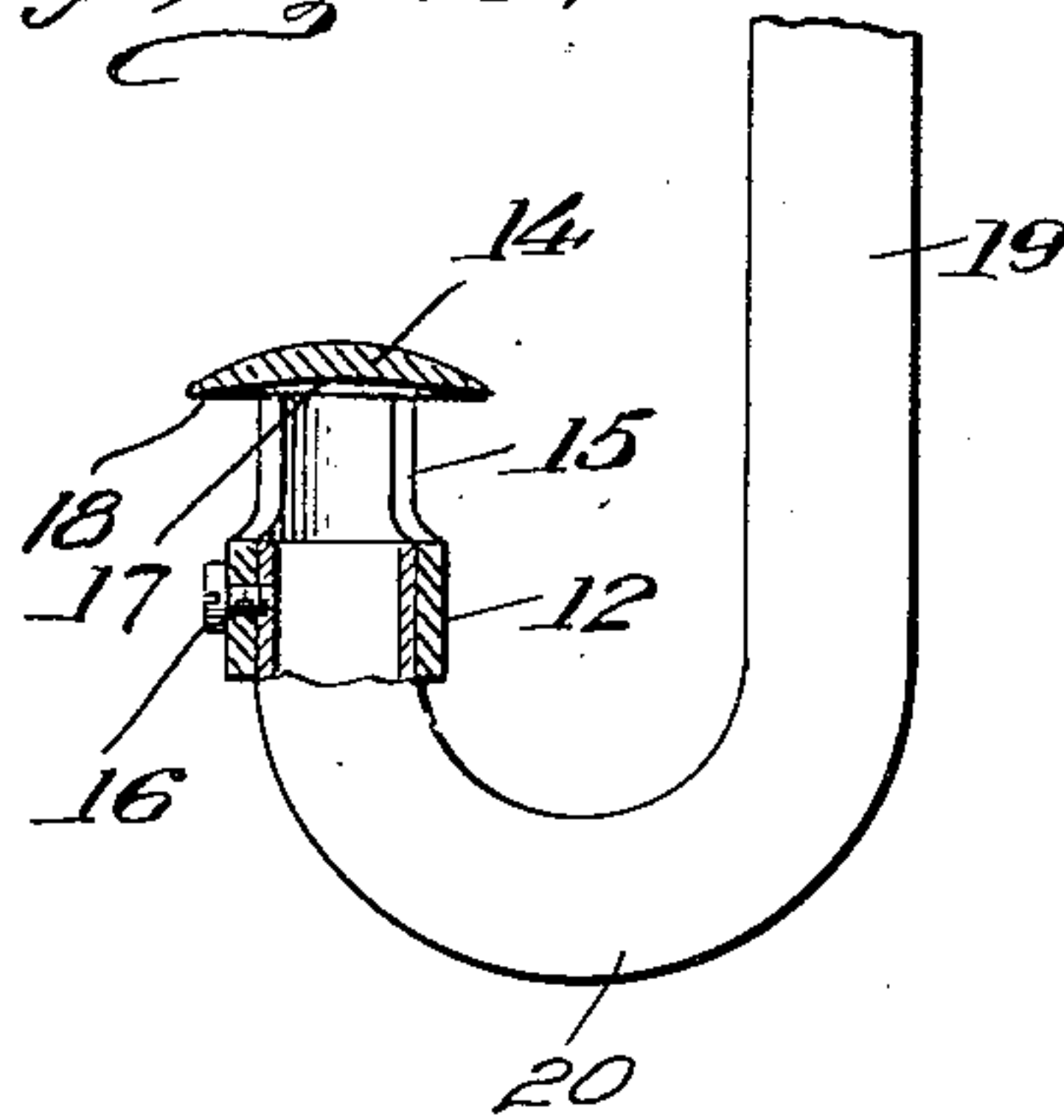


Fig. 3.



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UNITED STATES PATENT OFFICE

2,123,809

DEFLECTOR

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1 Claim. (Cl. 137—21)

My invention relates to improvements in deflectors for use in domestic boilers or tanks such as are generally used for supplying hot water for household purposes.

As is well known, the discharge of hot water from such boilers is effected from the top thereof by the pressure of incoming water from the main entering the boiler by way of a so-called drip pipe usually extending through the top of the boiler downwardly into the same and terminating adjacent the bottom thereof. The result of this arrangement is that the incoming water is directed downwardly against the bottom of the boiler and the water at this point agitated so as to stir up rust and other sediment, which is inevitably deposited therein, and force it upwardly to be discharged with the hot water being drawn off. The disadvantages resulting from the consequent condition of the water need not be entered into herein.

With the foregoing in mind, the primary object of my invention is to provide for deflecting the water entering through a drip pipe, arranged as above described, away from the bottom of the boiler and in a manner such that the water and sediment in the bottom of the boiler are to all intents and purposes not disturbed, and the entire water contents of the boiler always kept in a clear condition.

Another object is to equip the drip pipe of such boilers with a deflector directing the incoming water in the manner above set forth, and particularly designed to prevent said pipe from becoming clogged by scale or other matter entering the same from the water supply pipes.

Other objects are to provide a device of the character and for the purposes above set forth, which is readily attachable to the usual drip pipe and which may be inexpensively and easily incorporated in boiler equipment of the type specified.

Other and subordinate objects are also comprehended by my invention, all of which, together with the exact nature of my improvements, will become readily apparent when the following description and claim are read with reference to the accompanying drawing.

In said drawing:

Figure 1 is a view in vertical section illustrating my improved deflector applied to the drip pipe of a boiler of the usual construction.

Figure 2 is a view in perspective of the deflector detached and drawn to an enlarged scale.

Figure 3 is a view partly in side elevation and

partly in vertical section of a modification of the invention, and

Figure 4 is a fragmentary longitudinal sectional view taken through another modified form of my invention.

Referring to the drawing in detail, and particularly with reference to Figures 1 and 2, the numeral 1 indicates the usual domestic boiler that is provided at its lower end with a drain pipe 2 and at its upper end with the usual spud 3, to which the hot water discharge pipe 4 is coupled by means of an elbow 5 and the usual union connection, as shown. The cold water inlet pipe 6 is connected to the upper end of the boiler, by means of an elbow 7 and the usual union connection, and the elbow 7 extends into the opening 8 and through the spud 9 thereof.

The cold water feed or drip pipe 10 is connected to the elbow 7 to depend therefrom, by means of a bushing 11 sweated or otherwise secured onto the upper end of the pipe 10 and threaded into the elbow 7. It will be seen that the inlet opening 8 is considerably larger in diameter than the pipe 10 to allow for the insertion of the deflector which forms the subject matter of the present invention there-through, as the deflector is of greater diameter than the pipe 10 and is secured to the inner end thereof, as shown.

The deflector includes a metallic sleeve 13 which is preferably of brass and of the proper inside diameter to fit snugly at one end over the lower end of the drip pipe 10 and a round mushroom shaped head 14 is formed on the sleeve and closes the outer end thereof, the head being preferably larger in diameter than the sleeve, and a plurality of discharge ports 15 is formed in the sleeve at the head end thereof, there being two ports in the form as shown and which are diametrically opposed with respect to each other.

While any well known means may be used for securing the deflector to the drip pipe 10, I have shown a screw 16 for that purpose, but a bolt and nut connection may be used for that purpose, with the bolt extending through the sleeve and pipe, as will be apparent. In any event, the pipe terminates in the sleeve above the ports 15.

The inner face of the head 14 is preferably dished to form a concaved deflecting surface underlying the drip pipe 10, and extending in a plane beyond the sleeve as at 18. However, the inner face may have a centrally arranged concavity of the same diameter as that of the drip

pipe 18, thereby providing a straight edge disposed beyond the sleeve.

The openings or ports 15 are relatively large, for the purpose of preventing the same from becoming clogged, by rust scale or other foreign matter, as will be apparent, and the openings are shown as having rounded upper ends, with straight side walls terminating with the upper or deflecting surface 17.

From the above description and disclosure of the drawing, it will be obvious that the water passing through the drip pipe 18 is discharged against the deflecting surface 17 of the head 14, and is deflected thereby outwardly and upwardly, as well as at a point sufficiently remote from the bottom of the boiler to prevent the sediment therein from being disturbed, consequently the heated water that passes from the boiler to the discharge pipe 4 is retained clear and free from sediment at all times.

While only two ports or openings 15 are shown, it will be obvious that any number may be employed, without departing from the spirit of the invention.

In the modified form shown in Figure 3, the drip pipe 18 is provided with an upturned or goose neck lower end 20, with a deflector of the same construction as that previously described, and secured thereto in an inverted position as compared to that in the preferred embodiment of the invention. While the deflector in the modified form will cause the water to be directed downwardly, it will be obvious that it is disposed a sufficient distance from the bottom of the boiler so as not to disturb the sediment therein.

In Figure 4 I have illustrated a further modified form in which the reference character 21 indicates a drip pipe having substantially arch shaped openings or ports 22, arranged in dia-

metrically opposed sides of the outer end thereof, and the outer end has secured thereto a substantially conical shaped head or plate 23 with its dished portion facing the pipe, through the instrumentality of lugs 24 formed on the pipe to extend through the slots in the plate and crimped against the outer surfaces of the plate, as shown. The plate 23 is of a diameter to extend beyond the pipe and the concaved or dished portion deflects the water outwardly and rearwardly in the same manner, as the deflecting surface 17 of the head 14 of the other form of the invention disclosed.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claim.

What I claim is:

In a water heating boiler having a cold water inlet pipe, a feed pipe connected to the inlet pipe and depending from the top of the boiler, said feed pipe terminating adjacent to the bottom of the boiler and having diametrically opposed substantially arch-shaped discharge ports in the lower end thereof, lugs extending from the lower end, a substantially conical head providing a dished face and having slots with the lugs mounted therein and bent against the head for securing the latter to said lower end with the face directed toward the same, said head being of a diameter to extend outwardly beyond the circumference of said lower end and adapted for deflecting water outwardly through the discharge ports and angularly with respect to the axis of the feed pipe.

HENRY CLINTON SEITZ.