

1,209,063.

FIG. 1.

28

31

21

24

22

A

26

WATER

FIG. 2.

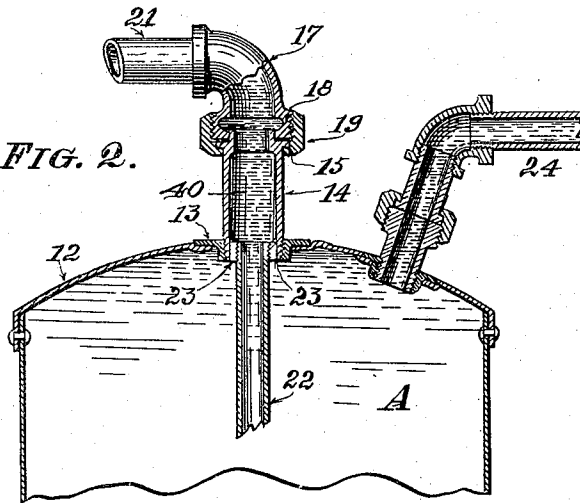


FIG. 3.

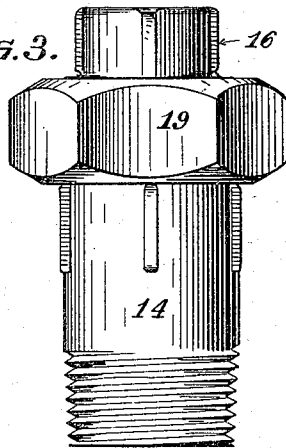


FIG. 4.

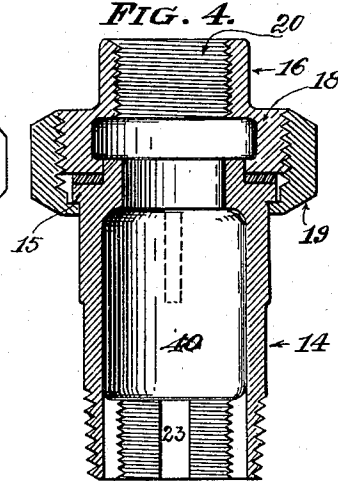
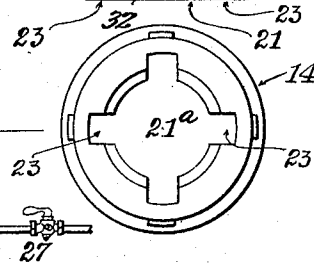


FIG. 5.



WITNESSES

WITNESSES:
J. B. Smith
W. R. Karl

INVENTOR:
JOHN R. STENECK,
BY *Michael J. Stark & Sons*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN R. STENECK, OF OAK PARK, ILLINOIS, ASSIGNOR TO ILLINOIS MALLEABLE IRON CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

CIRCULATING BOILER-COUPLING.

1,209,063.

Specification of Letters Patent.

Patented Dec. 19, 1916.

Application filed October 27, 1915. Serial No. 58,188.

To all whom it may concern:

Be it known that I, JOHN R. STENECK, a citizen of the United States, and resident of Oak Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Circulating Boiler-Couplings; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which this invention appertains to make and use the same.

This invention has general reference to pipe fittings; and especially to a pipe fitting used on kitchen boilers to connect the water supply to said boiler. Its object is to prevent siphoning of the kitchen boiler or hot water tank when the stop and waste in the supply pipe is shut off for any reason, and the water pipes in a building emptied through said waste.

My invention consists, essentially, in the novel and peculiar combination of parts, and details of construction, as hereinafter first fully set forth and described, and then pointed out in the claims.

In the drawings already referred to, which serve to illustrate this invention more fully, Figure 1 is a diagrammatic illustration of the operation of my invention. Fig. 2 is a sectional elevation of a portion of a kitchen boiler provided with my improved circulating coupling. Fig. 3 is an elevation of the circulating coupling detached. Fig. 4 is a sectional elevation of the same, and Fig. 5 is an inverted plan thereof.

Like parts are designated by the same characters and symbols of reference in all the figures.

A, in these drawings designates the usual kitchen boiler. It is preferably a cylindrical vessel containing the water to be heated in any suitable manner, and it is closed at its top by a head 12, in which there is an opening fitted with an internally screw-threaded spud 13, within which the coupling proper is securely fitted. This coupling comprises a so-called tail-piece 14, being a tubular member, the lower end of which is externally screw threaded to engage the internal screw thread of the spud 13, and the upper end of which is provided with a laterally extending flange 15.

16, designates the male part of the cou-

pling. It is either a straight tubular member, as shown in Figs. 3 and 4, or a curved element, 17 usually termed the elbow, as illustrated in Figs. 1 and 2. This male part has at its lower end an enlargement 18, which is externally screw-threaded and constructed to receive the usual coupling nut 19, and its other extremity is internally screw-threaded at 20, to connect with the water supply pipe 21.

The lower extremity of the tail-piece 14 is internally screw-threaded at 21^a, where-with connects a downwardly-depending pipe 22 which extends to within a reasonable distance of the bottom of the boiler and which pipe 22 constitutes the feed pipe for the same.

In the threaded portion 21^a of the tail-piece there are a series of grooves or notches 23, preferably in axial alinement with the axis of the bore of the tail-piece 24, though not necessarily so, said grooves forming, as it were, a series of passages which passages terminate in an enlargement 40, in the bore of the tail piece, said passages connecting the upper space in the boiler A with the interior of the tail-piece 14, past the extreme end of the pipe 22.

From the boiler A leads a discharge member 24 which connects the boiler with the hot-water pipe system 28, of a building, etc., and which, being of the usual type, needs no detailed description.

In operation, water from the water main or other source of supply 30, enters the tank or boiler A through the pipes 21 and 22 and is forced by the pressure in the boiler A through the escape or discharge pipe 24 to the hot water system 28, while at the same time the cold water system is supplied by the riser 31.

When repairs in the water system of a building become necessary, and the usual stop-and-waste valve 27 at the lowest point of the water supply is turned to cut off said water supply and to empty the system, the suction caused by the discharge of water from the hot-water system 28 into the tank or boiler A, would cause the boiler A to overflow through the pipe 22, and by the siphoning action started by this inflowing water through the pipe 24 into the tank A would cause the latter to be emptied, which, in cases where the boiler is connected with, and its water heated by, a heater 26, might

cause serious damages and possibly an explosion or a collapse of the boiler A. This, however, is prevented by the passages 23 in the tail-piece 14, through which air entering the boiler A through the pipe 24, after the hot water system has been emptied will escape. It is a well-known fact that during the colder and the coldest part of the winter, when house heating systems are usually forced to their fullest capacity, and when during the night but little or any water is drawn from the hot water system, and where the kitchen boiler is connected to the house heating system, by a coil 26, or similar contrivance, steam will be generated in the tank A, which will force the water in the tank back into the water main 30, and, after being finally condensed, will cause the formation of a vacuum in the tank A, as it has frequently happened, and the collapsing of the boiler caused by atmospheric pressure.

I am aware that it is customary to drill in the pipe 22, adjacent the head of the boiler, a small hole to provide for a vent, but it is also a fact that the accumulation of sediment in the boiler, rapidly closes this small hole, and that then the boiler is subjected to all the objections aforesaid.

By providing the series of grooves 23 in the tail piece which grooves are preferably produced in the process of casting of the tail piece, I have provided for a multiplicity of these vents without adding anything to the cost of production of the said tail piece, and at the same time I have avoided the necessity of drilling the said small hole, which drilling is frequently omitted to be performed, and many times entirely forgotten.

Having thus fully described this invention, I claim as new and desire to secure by Letters Patent of the United States—

1. In a hot water system, a stand boiler, a circulating coupling connected to said stand boiler, said circulating coupling comprising a male-piece, a tail-piece, and a coupling nut, constructed to separably connect said male, and said tail, pieces, said tail-piece having its lower end reduced in diameter

and its lower terminal internally screw-threaded, there being in the terminal portion of said tail-piece internal screw-threads and a series of grooves cut through these threads, and an inlet pipe engaging with one end said internal screw-thread.

2. A circulating boiler coupling, comprising, in combination, a male-member, a tail-piece, a coupling nut on said tail piece constructed to connect the tail and male-pieces, said tail-piece having at its lower terminal an internally screw-threaded bore, there being in said bore a series of grooves or indentations, and a discharge pipe constructed to engage the internally screw-threaded portion of the tail-piece, whereby said grooves afford passages past the terminal of said discharge-pipe into the bore of the tail-piece, said grooves being formed in the said tail piece by removing portions of the internal screw threads and parts of the interior wall of said tail piece, there being an enlargement in the bore of said tail piece in which said grooves terminate.

3. In an instalment of the nature described, a hot water tank, said tank comprising a shell, said shell having a bottom and a head; a cold water supply pipe; a circulating union coupling, said coupling comprising a male piece, a nut, and a tail piece, said tail piece being constructed to engage the head of said tank, there being in the bore of the lower end of said tail piece a female thread, and in said tail piece an enlarged chamber, portions of said female thread being removed to afford a series of passages between the interior of the tank and the interior of said chamber; a pipe constructed to engage said interior screw thread; a heating device connected to said tank; a hot water system; a discharge element connected to the head of said tank, and a cold water system, likewise connected to said tank.

In testimony that I claim the foregoing as my invention I have hereunto set my hand at Chicago, Ill., this 22d day of October, 1915.

JOHN R. STENECK.