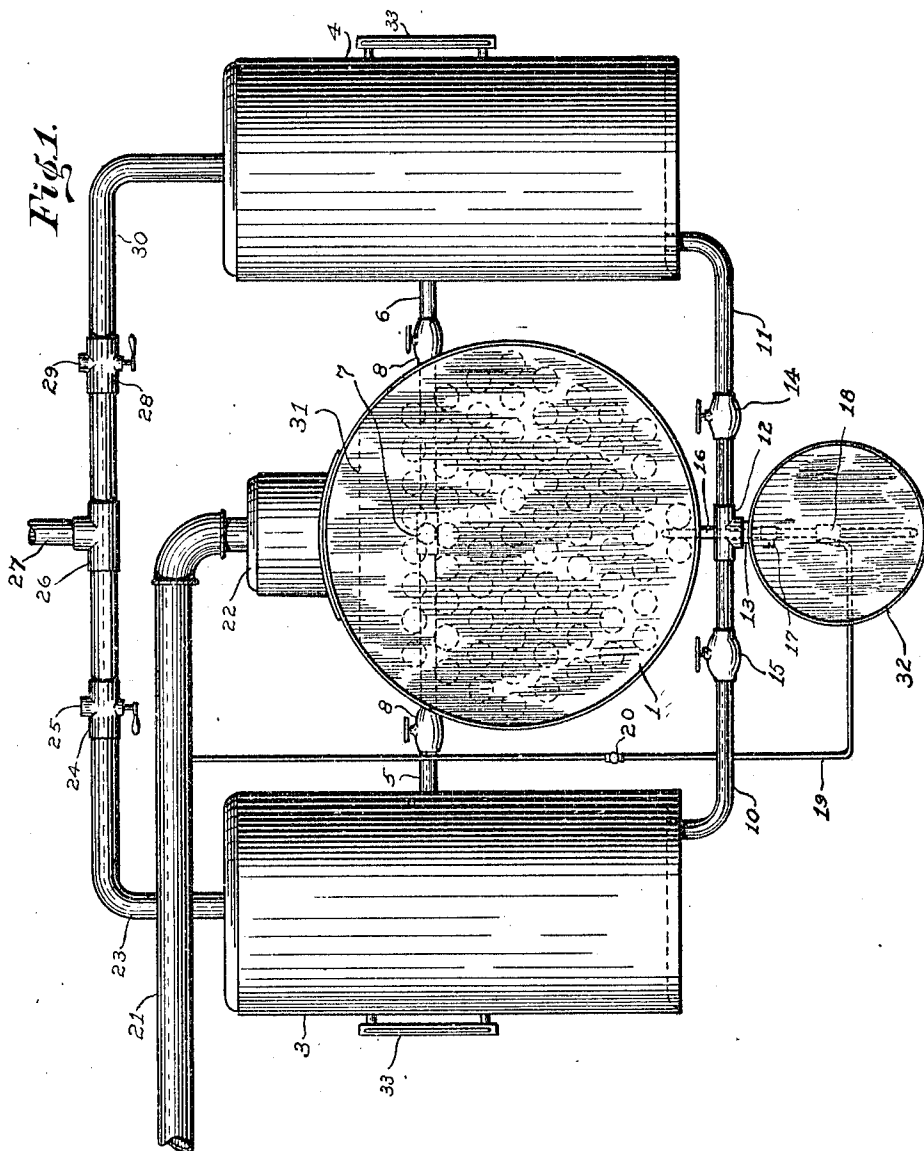


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 PRESSURE REDUCING DEVICE FOR HIGH PRESSURE BOILERS.
 APPLICATION FILED JUNE 15, 1909.

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Patented Apr. 26, 1910.

2 SHEETS—SHEET 1.



Witnesses.

W. C. Rife
W. L. Walker

Inventor:

Joseph Cooper Mirick

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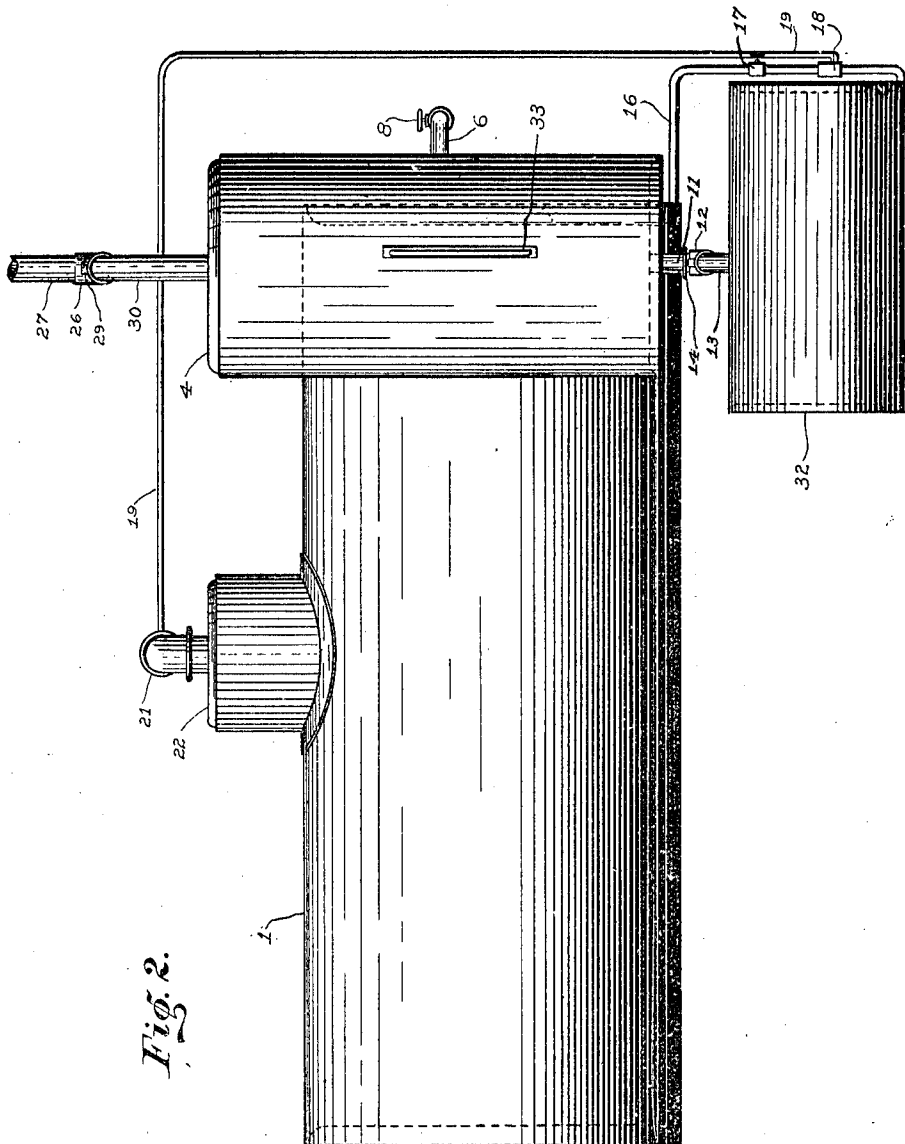


Fig. 2.

Witnesses.

L. L. Bigley
Leon Walker

Inventor.

Joseph Cooper Mirick

UNITED STATES PATENT OFFICE.

JOSEPH COOPER MIRICK, OF PUEBLO, COLORADO.

PRESSURE-REDUCING DEVICE FOR HIGH-PRESSURE BOILERS.

955,977.

Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed June 15, 1909. Serial No. 502,396.

To all whom it may concern:

Be it known that I, JOSEPH COOPER MIRICK, a citizen of the United States, residing at Pueblo, in the county of Pueblo and State of Colorado, have invented a new and useful Improvement in Pressure-Reducing Devices for High-Pressure Boilers, of which the following is a specification.

My invention relates to pressure reducing devices for high pressure boilers in which hot water from a high pressure boiler is admitted, alternately, into two low pressure steam boilers, in which low pressure steam is formed by the hot water coming in contact with the cold interior of the low pressure boilers, after which the cold water is drained into a receiving tank and then pumped, or injected, into the high pressure boiler again; and the objects of my improvement are, first, to provide a means for desirably heating buildings from a high pressure boiler, and, second, to provide a means of producing a low steam pressure from a steam boiler containing steam at high pressure. I attain these objects by the mechanisms illustrated in the accompanying drawings in which—

Figure 1 is a front elevation of a high pressure steam boiler with my invention mounted thereon, and Fig. 2 is a side elevation of the same.

Similar numerals refer to similar parts throughout the views.

To the water space of high pressure boiler 1 are attached the pipes 5 and 6 through a T 7 at a point below the high water line 31. Pipes 5 and 6 are each provided with valves 8 and are attached to the water space of low pressure boilers 3 and 4 respectively, in such manner that hot water from boiler 1 may be admitted under high pressure, into boilers 3 and 4 by opening one or other of valves 8. The boilers 3 and 4 being of a tubular type, and empty, when the hot water, under pressure, from boiler 1 is admitted, the hot water coming into contact with the cool interior of boilers 3 and 4 will form steam at low pressure, which is drawn off for use as heat or to operate low pressure machinery, through pipes 23 or 30. Boilers 3 and 4 are each connected to a receiving tank 32 by pipes 10 and 11 through T 12 and pipe 13, each of pipes 10 and 11 being provided with valves as at 14 and 15. The purpose of these pipes is to drain the cooled water from boilers 3 and 4 into receiving

tank 32, when they have become filled with water from boiler 1. The water in tank 32 is returned to boiler 1 by means of injector 18 which receives its high pressure steam, to operate it, through pipe 19 from main high pressure pipe 21. Pipe 16 carrying injector 18 and valve 17 connects the tank 32 to the water space of boiler 1. Valve 20 on steam pipe 19 is opened when it is desired to operate the injector 18, and valve 17 is always open when the injector is in operation, and closed to retain the water in boiler 1 when the injector is not operating.

The two low pressure boilers 3 and 4 are connected to, and on opposite sides of, the boiler 1 and tank 32 in precisely the same manner, each connection being provided with a valve so that one of the low pressure boilers may be receiving hot water from boiler 1 while the other is being drained into tank 32. The low pressure boilers are joined to each other by pipes 23 and 30 in the T 26 to which is connected low pressure main 27. Pipes 23 and 30 each have a three-way valve 24 and 28, respectively, the purpose of which is to cut out the low pressure from boilers 3 or 4 from pipe 27 while one of them is being drained into tank 32 and to admit cold air through ports 25 and 29, respectively, while draining, thus permitting a free movement of the water from the low pressure boilers as well as cooling their interiors.

Sight gages 33 are provided so the operator can see when the water is raising in boilers 3 or 4 to a point where it is necessary to drain them into tank 32.

The space above pipes 5 and 6 serves as a steam space for the low pressure boilers; and it may be seen that, by the arrangements of my improvement, low pressure steam may be had, constantly, in main 27 while dry steam, at high pressure, from dome 22 of boiler 1 may be had; and by this new and novel arrangement a high pressure boiler may supply pressure through main 21 to operate high pressure machinery while main 27 may be supplied with very low pressure for heating purposes and for operating low pressure machinery, all from the same source of heat.

Having thus fully and accurately described my improvement what I claim is—

1. In a pressure reducing device for high pressure steam boilers having two low pressure steam boilers connected to the water

space of a high pressure steam boiler, three-way valved pipes joining the said low pressure boilers to each other and to a low pressure steam main, substantially as described.

- 5 2. In a pressure reducing device for high pressure steam boilers having two low pressure boilers connected to the water space of a high pressure steam boiler, and connected to each other, and to a low pressure steam
10 main, a receiving tank connected, by valved pipe means, to the bottoms of said low pressure boilers, and connected by a pipe having thereon an injector and a valve, to the said
15 high pressure steam boiler, substantially as set forth.

3. In a pressure reducing device for high pressure steam boilers, of the character described, having two low pressure steam boilers connected by valved pipe means to the

water space of a high pressure boiler and 20 joined to each other by three-way valved pipe means, said three-way valved pipes connected to a low pressure main, and said low pressure boilers connected to a receiving tank by valved pipe means, said receiving 25 tank connected by valved pipe means to the said high pressure boiler, said valved pipe having operatively thereon an injector connected by valved pipe means to the high pressure main of said high pressure boiler, 30 all substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH COOPER MIRICK.

Witnesses:

C. C. BIXLEY,
GEO. L. WALKER.