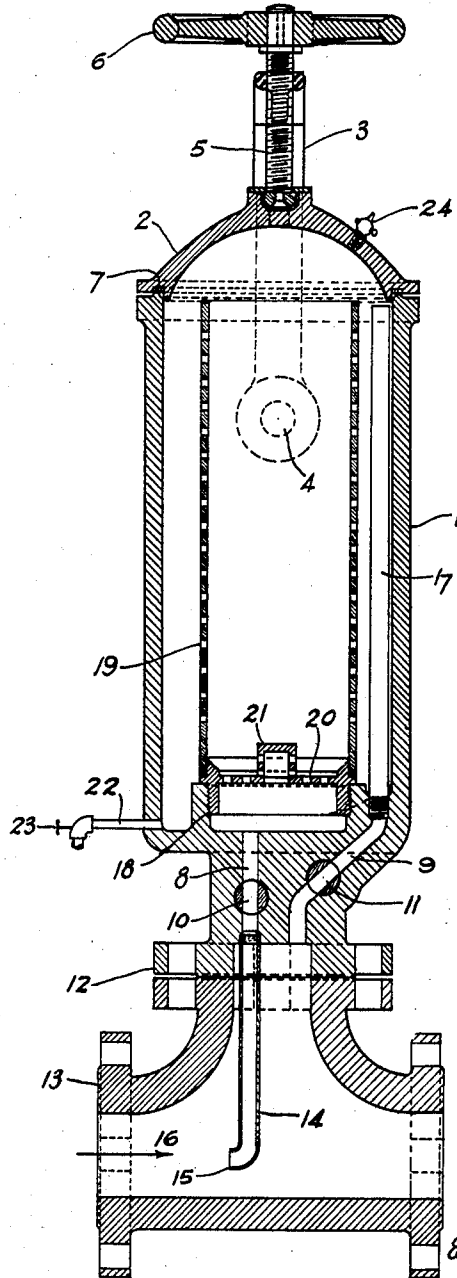


E. F. STEWART.
FEEDER FOR BOILER COMPOUNDS.
APPLICATION FILED APR. 14, 1919.

1,335,802.

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1,335,802.

Specification of Letters Patent.

Patented Apr. 6, 1920.

Application filed April 14, 1919. Serial No. 289,871.

To all whom it may concern:

Be it known that I, EDWIN FERGERSON STEWART, a citizen of the United States, residing at Hopewell, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvements in Feeders for Boiler Compounds, of which the following is a specification.

This invention relates to new and useful improvements in feeders for boiler compounds and has for its object the construction of a device of this class which shall be simple in construction, economical to manufacture, free from complicated or delicate parts, and which shall require very little attention for adjustment or repair.

This device is to be used for feeding various boiler compounds of specific gravities ranging from below unity to above unity in either liquid or solid form to a boiler or battery of boilers by introducing the same into the feed water continuously at rates which automatically vary with the amount of water fed in. The feed water compound may be introduced into the boiler by the use of this device without passing through the feedwater pump or filter, and the device itself requires no wrench or tools in charging it with the material to be fed.

The invention will be understood by reference to the accompanying drawing which is a sectional view through the device attached to a T in a feed water line.

In the drawing reference character 1 designates a cylindrical container which is closed at its upper end with a swinging cover 2, held in place by a yoke 3 on pivots 4 and screw 5 having hand wheel 6. The screw passes through yoke 3 to press cover 2 against container 1 with a packing ring 7 interposed between the two to form a tight joint.

The lower end of the container 1 has inlet 8 and outlet 9 leading therefrom, in which inlet 8 and outlet 9 are interposed the valves 10 and 11, respectively, which may be adjusted to close the inlet and outlet either partially or entirely. The container 1 is provided with a flange 12 by means of which it may be attached to a T 13 which is interposed in the feed water line. A pipe 14, having its end 15 turned in the direction from which the feed water comes as indicated by the arrow 16, communicates with the lower end of inlet 8. A stand pipe 17 having an open upper end is screwed into

the upper end of the outlet 9 for a purpose to be described.

An interiorly threaded upstanding annular collar 18 is provided in the lower part of container 1. A second container in the form of a perforated basket or strainer 19 is centrally located in the container 1, and has a perforated and threaded bottom 20 by which it can be maintained in position when screwed into flange 18. The bottom 20 is also provided with a hollow, perforated, upstanding projection 21.

The container 1 is provided at its lower part with a drain pipe 22 having a valve 23, and a vent 24 is provided in the cover 2.

The operation is as follows:

The inlet 8 and outlet 9 are closed by means of valves 10 and 11, whereupon hand wheel 6 is turned until the cover is raised sufficiently to permit the yoke 3 to swing on pivots or gudgeons 4 thereby permitting access to the container 1. Any water present may be drained off through pipe 22. The feed water compound is then introduced into the basket 19 and the cover 2 swung into place and clamped down by hand wheel 6. Valves 10 and 11 are then opened and the air is let out through vent pipe 24 which is then closed. The feed water flowing toward the boiler in the direction of the arrow 16 creates a pressure at the mouth 15 of pipe 14 which causes a portion of the feed water to enter the basket 19 through the perforations in its bottom 20, and percolating through or around the compound in basket 19 it carries a portion of the compound through the perforations in the cylindrical surface of basket 14 and finally into the outlet 9 from which it enters with the feed water into the boiler. The amount of water passing through the device will depend partly upon the amount passing through the T 13, and can be further regulated by adjusting the valve 10.

The stand pipe 17 is provided so that a liquid feed water compound with a specific gravity less than unity or a solid compound whose water solution is less than unity may be employed. In such cases the water entering through inlet 8 gradually displaces the lighter compound which rises and enters the upper end of pipe 17 and thus goes to the boiler. In case the compound or its solution is heavier than water the pipe 17 may be removed, when the heavy liquid will enter the outlet 9 directly.

The projection 21 is provided on the bottom 20 so that there will be no danger of the perforations in the bottom 20 being closed when a solid stick of the compound or a can containing the same is placed in the basket 19. It is obvious that it is unnecessary to remove the compound from the can since the can may be punched with holes and placed in the basket 19. This is especially desirable when compounds or materials which are corrosive or require careful handling such as caustic soda are to be used in either solid or liquid form as they may be provided in light cans or closed cylinders of a size to be inserted in the basket 19, and the holes punched just before the cans are inserted.

The basket 19 is further useful where lumps of the compound are used because the perforations in basket 19 do not permit lumps of the compound large enough to stop the outlet pipe 9 to escape and interfere with the operation of the device.

I claim:

1. In a feeder for boiler compound, a container, a drain pipe and a vent for said container, an inlet pipe and an outlet for said container, means for attaching said container to a T, said inlet pipe projecting into said T and said outlet opening into said T when the container is attached to the medial portion thereof.

2. In a feeder for boiler compound, a container, a removable cover for said container, a drain pipe and a vent for said container, an inlet pipe and an outlet for said container, means for attaching said container to a T, said inlet pipe projecting into said T and said outlet opening into said T when the container is attached to the medial portion thereof.

3. In a feeder for boiler compound, an outer container, an inner, perforated container, an upstanding projection in the lower portion of said inner container, an inlet to the lower portion of said inner container, and an outlet leading from the lower portion of said outer container.

4. In a feeder for boiler compound, an outer container provided with an annular collar in the lower portion thereof, said collar forming a receptacle having walls parallel to the walls of said container, and a strainer attached to said collar.

5. In a feeder for boiler compound, an outer container provided with an annular collar in the lower portion thereof, said collar forming a receptacle having walls parallel to the walls of said container, a strainer attached to said collar, said strainer being adapted to hold the boiler compound.

In testimony whereof I affix my signature.

EDWIN FERGERSON STEWART.