

(No Model.)

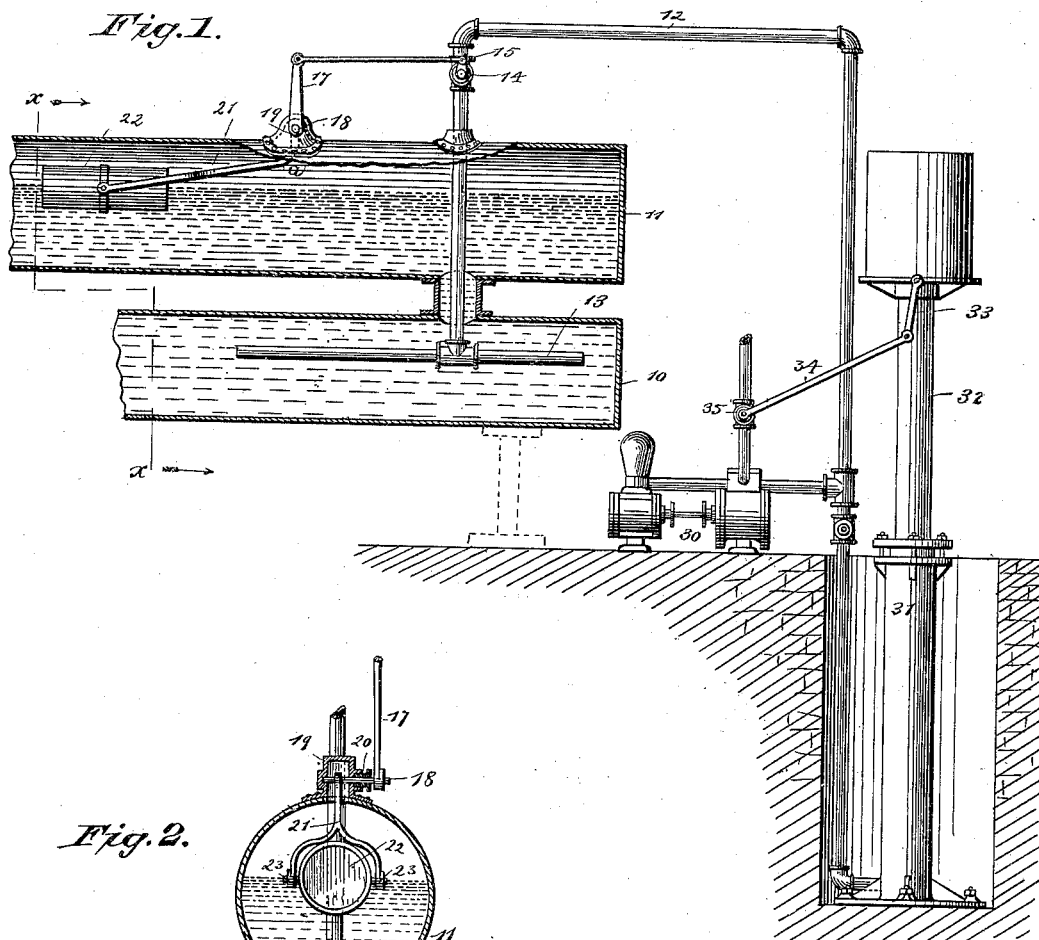
M. P. JANNEY.

BOILER FEEDING ATTACHMENT.

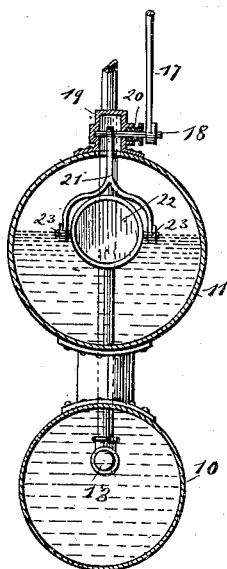
No. 383,227.

Patented May 22, 1888.

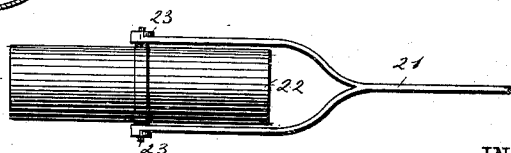
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

MORRIS P. JANNEY, OF EASTON, PENNSYLVANIA.

## BOILER-FEEDING ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 383,227, dated May 22, 1888.

Application filed September 12, 1887. Serial No. 249,473. (No model.)

*To all whom it may concern:*

Be it known that I, MORRIS P. JANNEY, of Easton, in the county of Northampton and State of Pennsylvania, have invented a new and Improved Boiler-Feeding Attachment, of which the following is a full, clear, and exact description.

This invention relates to automatic boiler-feeders, and particularly to the floats employed in connection with such feeders.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side view of my improved boiler-feeding attachment, the boiler in connection with which the attachment is shown being shown in section. Fig. 2 is a view taken on line *x x* of Fig. 1, and Fig. 3 is an enlarged detail view of the float and the lever to which it is connected.

In illustrating my boiler-feeding attachment I have represented it as it would appear when arranged in connection with a sectional boiler, of which the lower section is shown at 10 and the upper section at 11. The usual feed-pipe, 12, leads into and through the section 11, downward through the connection between the sections, to a horizontal discharge-pipe, 13, that is located in the section 10. A valve, 14, is located in the feed-pipe 12, and this valve is provided with a lever-arm, 15, that is connected by a link, 16, with an arm or lever, 17, that is secured to the extending end of a rock-shaft, 18, said shaft being mounted in bearings that are formed in a cap, 19, that is secured to the boiler-section 11, the shaft extending outward through a stuffing-box, 20, as best shown in Fig. 2. To this shaft 18 there is rigidly connected a bifurcated lever, 21, which lever extends downward to the point *a* from the shaft 18 in a line parallel or about parallel with that occupied by the arm 17; but at the point *a* the lever is bent, as is shown in Fig. 1. The levers 17 and 21 and the rock-shaft 18 together constitute a double-armed lever that is fulcrumed within the cap 19.

Between the arms of the bifurcated end of the lever 21, I arrange a water-tight float, 22, which is preferably cylindrical, the float being provided or formed with trunnions 23,

which ride in bearings formed at the ends of the arms of the lever 21. By this arrangement I am enabled to provide a float which will always rest in a horizontal position upon the water in the boiler, and at the same time I am able to introduce a float of almost any power required, for by making my float of a diameter such as will permit of its introduction through an ordinary man-hole I have only to increase the length of the float in order to increase its power. The feed-pipe 12 leads to a pump, 30, and onward to an accumulator, 31, to the piston 32 of which accumulator there is pivotally connected a link, 33, which link is in turn pivotally connected to a lever, 34, that is rigidly connected to the throttle 35 of the pump 30.

In operation, as the water within the boiler falls, the float 22 will act to open the valve 14 and permit the water to enter through the feed-pipe 12; but as the water rises to the required height within the boiler the said valve 14 will be closed and the water will be prevented from entering the boiler, so that as the pump continues to act the pressure within the pipe 12, which leads to the accumulator 31, will be increased, and the piston 32 of said accumulator will be raised, and in rising will move the lever 34 so that the throttle 35 will be closed and the pump stopped; but when the valve 14 again opens, owing to the lowering of the water within the boiler, the piston 32 will act to force the water within the accumulator into the boiler, and in so doing will move downward, which downward movement of the piston will act to open the throttle 35, and the pump will again start to act, and will continue to act until the piston 32 has been again raised to a position so that the throttle 35 will be closed.

The accumulator or any form of pump-governor might be entirely dispensed with, as the pressure upon the pipe 12 when the valve 14 is closed would rise until such pressure balanced the pressure of the pump, when the pump would stop; but this arrangement would put considerable strain on the pump and the pipes, and would waste more steam than would be used when the pump is stopped by the steam being cut off, as hereinbefore described.

Having thus fully described my invention,

I claim as new and desire to secure by Letters Patent--

1. The combination, with the pump and the feed-pipe connected with the pump and provided with a cock or valve at one side of its connection with the pump, of an accumulator connected with the throttle of the pump and with said feed-pipe at its end opposite the cock or valve, whereby when the feed-pipe valve or cock is closed the force of water in the feed-pipe causes the accumulator through its connections to operate the pump-throttle, substantially as set forth.

2. The combination, with the boiler, the pump and the feed-pipe connected between its ends with the pump and having a valve near its delivery end and a float within the boiler for operating the valve, of an accumulator connected with the throttle of the pump and with the opposite end of the feed-pipe, whereby

after the float has automatically closed the feed-pipe valve the force of water in the feed-pipe will cause the accumulator to operate the pump-throttle, substantially as set forth.

3. In a boiler feeding attachment, the combination, with an accumulator and a pump, of a connection between the accumulator and the throttle of the pump, a feed-pipe, a valve located in the feed-pipe and provided with a lever-arm, a lever, 17, mounted upon a rock-shaft, connection between said lever and the valve-lever, a bifurcated lever connected to the rock-shaft and extending downward within the boiler, and a float pivotally mounted between the arms of the bifurcated lever, substantially as described.

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Witnesses:

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