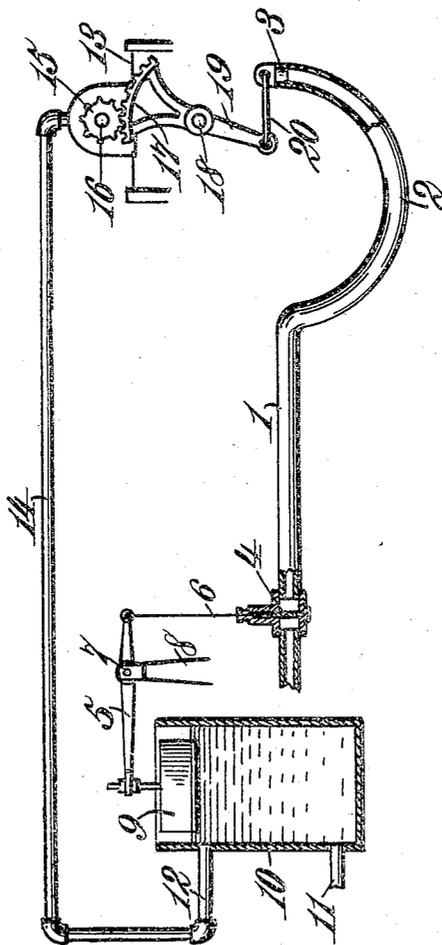


No. 792,540.

PATENTED JUNE 13, 1905.

M. H. McCOY.
FEED REGULATOR.
APPLICATION FILED SEPT. 12, 1904.



Witnesses.
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UNITED STATES PATENT OFFICE.

MARION H. McCOY, OF BALTIMORE, MARYLAND.

FEED-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 792,540, dated June 13, 1905.

Application filed September 12, 1904. Serial No. 224,208.

To all whom it may concern:

Be it known that I, MARION H. McCOY, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented new and useful Improvements in Feed-Regulators for Water and other Fluids, of which the following is a specification.

This invention relates to a regulator for pumps or other devices for feeding water or other fluids more particularly used in connection with steam-boilers; and the object thereof is to provide means hereinafter more specifically described for automatically throwing into operation a water-feed pump or other device for feeding water, more particularly to a steam-boiler, when the water therein falls below the normal level set therefor.

The invention further aims to construct a feed-regulator for the purpose set forth which shall be simple in its construction, strong, durable, efficient in its use, readily set up, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of the novel combination and arrangement of parts hereinafter more specifically described, illustrated in the accompanying drawings, and particularly pointed out in the claims hereunto appended.

In describing the invention in detail reference is had to the accompanying drawing, forming a part of this specification, and which illustrates a feed-regulator in side elevation constructed in accordance with this invention.

Referring to the drawing by reference characters, the feed-regulator embodies what may be termed a "distensible" pipe or tube 1, communicating at one end with a pressure-supply and having its outer end formed in a curvilinear manner, as at 2, and closed, as at 3. The pressure-supply with which the pipe 1 communicates may be steam, water, or air, and when the pipe 1 is opened in a manner as hereinafter referred to the excessive pressure therein is adapted to distend the curvilinear portion 2 of the pipe, so as to operate the mechanism for starting the feed of water, said mechanism being hereinafter referred to.

The pipe 1 is placed in communication with the pressure-supply through the medium of a lift-valve 4, which is arranged in said pipe 1

adjacent to the curvilinear portion thereof and which is vertically movable through the medium of a rocking lever 5, connected at one end to the upper end of the valve-stem 6. The fulcrum of the lever 6 is indicated by the reference character 7 and which is mounted upon a vertically-extending support 8. Said support 8 may be mounted upon the pipe 1 or placed in any other suitable position. The other end of the lever 5 carries a float 9, which is operable within a tank 10, having a suitable outlet 11. The tank 10 is adapted to contain a body of water, so that the rise and fall of the level of the water will impart a like movement to the float 9, thereby elevating or lowering that end of the lever 5 which is connected to the valve-stem 6 and imparting through such operation a like movement to the valve 4, consequently opening and closing the pipe 1, as the case may be. The tank 10 may be a boiler and is provided with an inlet 12, communicating with a feed-pump 13 or other device through the medium of a pipe connection 14.

When the necessary amount of water is in the tank or boiler, the feed-pump valve is closed; but when the level of the water is below normal the feed-pump valve is opened, so that a supply of water can be had to the tank or boiler, and said feed-pump valve is operated through the medium of a gear 15, carried on the valve-stem 16, and said gear 15 meshes with a toothed rocking segment 17, pivoted, as at 18, having a depending arm 19, which is connected, through the medium of the link 20, to the closed end 3 of the distensible pipe 1. When the pipe 1 is caused to distend through the medium of excessive pressure, the link 20 rocks the segment 18, which in turn will impart movement to the gear 15, and consequently open the feed-pump valve, thereby opening the feed-water supply, so that the necessary amount of water can be supplied to the tank or boiler.

The device is an unusually sensitive one, and it will be evident that the operation thereof will be such as to automatically regulate the feed of water when occasion requires, and therefore it is thought the many advantages of such device can be readily understood from

the foregoing description, taken in connection with the accompanying drawings, and it will furthermore be evident that variations, changes, and modifications can be resorted to without departing from the spirit of the invention or sacrificing any of its advantages, and I therefore do not wish to restrict myself to the details of construction hereinbefore described and pointed out, but reserve the right to make such changes, variations, and modifications as come properly within the scope of the protection prayed.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A feed-regulator of the character set forth involving a distensible pipe having one end formed in a curvilinear manner and closed, said pipe adapted to communicate with a pressure-supply, a float-operated valve mechanism adapted to open and close said pipe to establish and cut off communication between the pipe and the pressure-supply, thereby causing the distention and contraction of the curvilinear end of said pipe, a pump, and means connected with the pump-valve and with the closed end of said curvilinear portion of said pipe and adapted when said curvilinear por-

tion is distended and contracted to open and close the pump-valve.

2. A feed-regulator of the character set forth involving a distensible pipe having one end formed in a curvilinear manner and closed, said pipe adapted to communicate with a pressure-supply, a float-operated valve mechanism adapted to open and close said pipe to establish and cut off communication between the pipe and the pressure-supply, thereby causing the distention and contraction of the curvilinear end of said pipe, a pump, a gear connected with the pump-valve and adapted when operated to open and close said valve, a rocking segment meshing with said gear and adapted to impart movement thereto, and a link connected with the segment and with the closed end of said curvilinear portion of said pipe and adapted to be actuated when said curvilinear portion is distended and contracted.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

MARION H. McCOY.

Witnesses:

N. L. BOGAN,
JAMES L. NORRIS, Jr.