

987,610.

Fig.1.

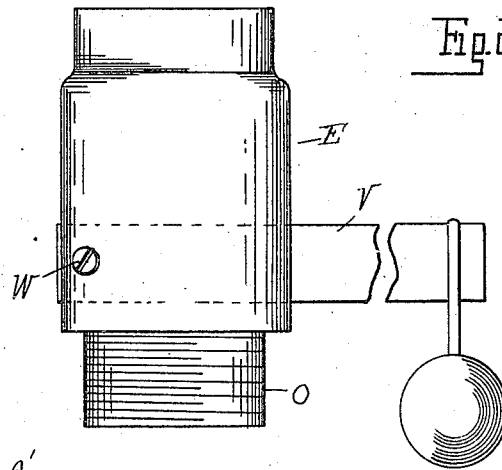
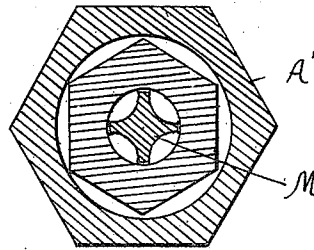
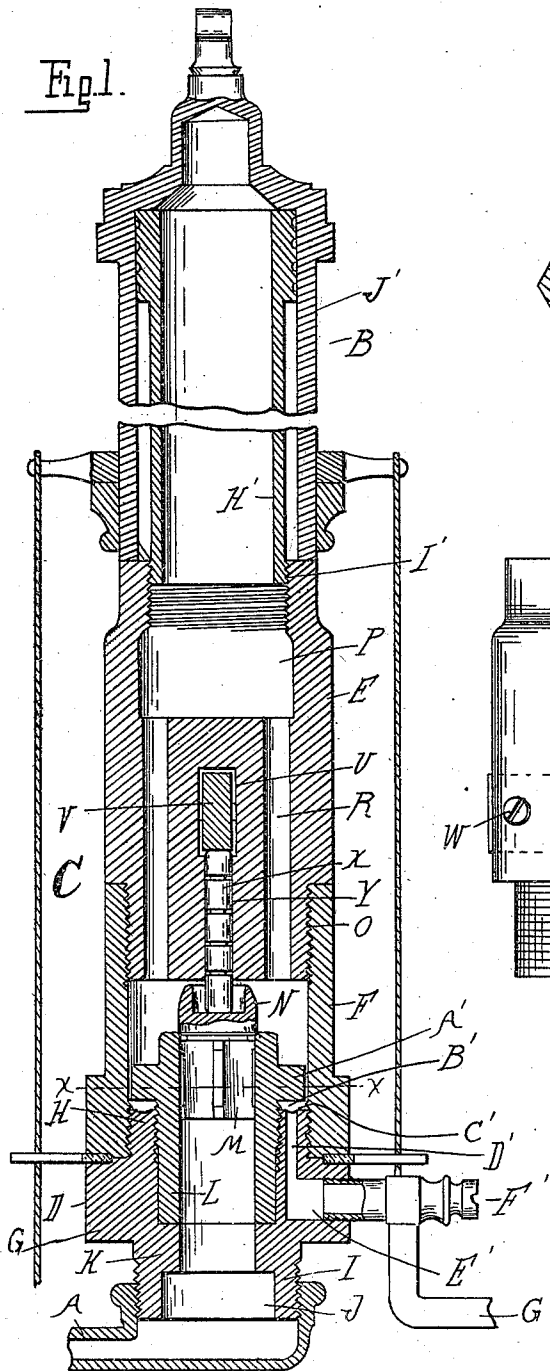


Fig. 2.

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UNITED STATES PATENT OFFICE.

JOHN B. BISCHOFF, OF MOUNT CLEMENS, MICHIGAN.

PRESSURE AND DAMPER REGULATOR.

987,610.

Specification of Letters Patent.

Patented Mar. 21, 1911.

Application filed April 21, 1910. Serial No. 556,889.

To all whom it may concern:

Be it known that I, JOHN B. BISCHOFF, a citizen of the United States of America, residing at Mount Clemens, in the county of Macomb and State of Michigan, have invented certain new and useful Improvements in Pressure and Damper Regulators, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to damper regulators of the type shown in Patent Number 881,656, granted to me March 10th, 1908, and consists in the novel construction, arrangement and combination of parts as more fully hereinafter described and pointed out in the claims.

In the drawings—Figure 1 is a longitudinal section through a device embodying my invention; Fig. 2 is a side elevation of a portion of the coupling, and Fig. 3 is a section on the line $x-x$ of Fig. 1.

A is a hollow bracket leading to the steam chamber of the boiler, B the damper-operating motor, and C the valve-controlled coupling connecting the hollow bracket and the motor. The coupling comprises a section D for engaging the bracket A, the section E to which the motor B is secured, and an intermediate section F connecting the sections D and E. The section D is provided with an enlargement G positioned intermediate the ends thereof and shaped to form a wrench hold, and the portions H and I of the member D upon opposite sides of the enlargement are externally screw-threaded.

J is a bore extending centrally through the member D, K an annular flange projecting within the bore forming a seat for the hollow tubular member L, and M is a valve having a winged guide bar N positioned within the hollow member L.

The intermediate section F has its opposite ends internally screw-threaded to engage respectively the external threads of the portion H and a reduced externally-threaded portion O of the section E. This latter section is bored for a portion of its length to form a chamber P communicating with the bore of the stationary cylinder H' of the motor, and also by means of the passages R with the interior of the section F.

Positioned within a slot U extending transversely through the section E is a

weighted valve-regulating lever V, which is pivotally connected at W to the member E.

X is a pin slidingly engaging a bore Y, and having its opposite ends in engagement respectively with the weighted lever and the valve.

The interior of the portion H adjacent the upper end thereof is internally screw-threaded to engage corresponding external threads upon the member L, and A' is an enlargement upon the latter member serving as a wrench hold.

In order to drain off the water of condensation which collects in the coupling, and also to permit the steam which passes into the coupling and the motor to gradually escape, the portion of the bore J above the annular flange K is made of a depth slightly less than the length of that portion of the tubular member L below the enlargement A', thereby forming an annular chamber B' between the enlargement A' and the upper edge C' of the portion H. This annular chamber is in communication with the interior of the section F by means of passages formed between the sides of the enlargement A' and the inner wall of the member F.

D' is a port or passage having one end communicating with the annular chamber B' and opening at its other end into a bore E' formed in the enlargement G.

A pet-cock F' engages the bore E', and G' is a drain pipe connected to the discharge of the pet-cock.

The stationary cylinder H' of the motor B has a screw-threaded engagement at I' with the upper end of the section E and the reciprocating cylinder J' of the motor is connected in any suitable manner with the damper to be controlled.

In operation of the device, when the desired pressure of the steam within the boiler is reached, which is predetermined by the position of the weight upon the lever V, the valve will be raised by the steam which will permit the latter to escape through the ports R into the cylinder H' and the pressure of the steam will raise the piston J'. The raising of the piston will operate the damper, (not shown).

The arrangement and construction of the several parts of the device as heretofore de-

scribed is exceedingly desirable, since it permits ready access to the parts for repair. Thus the motor can be detached as a unit from the coupling, while by securing the pet-cock to the section D access may be had to the valve without detaching the drain pipe from the discharge end of the pet-cock.

What I claim as my invention is:

1. In a damper regulator, a connection communicating with a source of fluid under pressure, a coupling comprising a section having a screw-threaded engagement with said connection, a tubular member seated within said section, an enlargement upon said tubular member forming a wrench hold, said enlargement in the seated position of the tubular member being spaced from the upper edge of said section forming an annular space therebetween, a valve seated upon said tubular member, a second section carrying a pressure regulating lever, an operative connection between the latter and the valve, an intermediate section connecting the first-mentioned section and the second section, a motor detachably carried by the second section, and a bore or passage formed

in the first-mentioned section and communicating with the annular chamber, forming a drain connection for the coupling.

2. In a damper regulator, a connection communicating with a source of fluid under pressure, a coupling engaging said connection, a tubular member seated within said coupling, an enlargement upon said tubular member forming a wrench hold, said enlargement in the seated position of the tubular member being spaced from the upper edge of said coupling forming an annular space therebetween, said coupling being provided with a port communicating with the said annular space and forming a drain connection therefor, a valve seat upon said tubular member, a weighted lever carried by the coupling controlling the valve, and a motor secured to the coupling and governed by said valve.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN B. BISCHOFF.

Witnesses:

JAMES P. BARRY,
AUBREY V. R. PULLEYBLANK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
