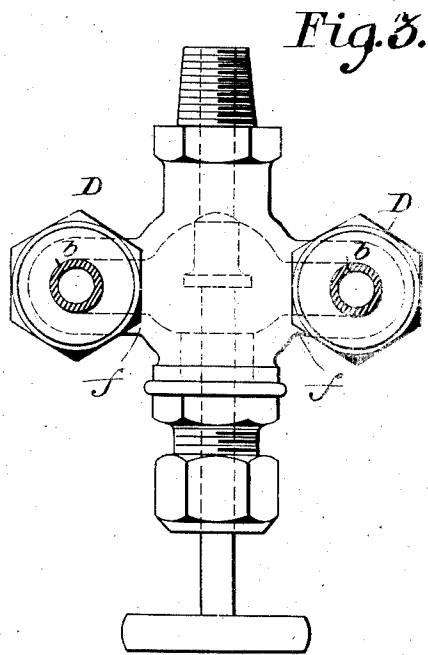
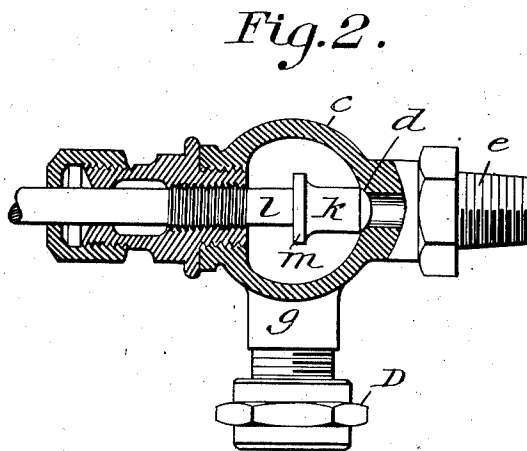
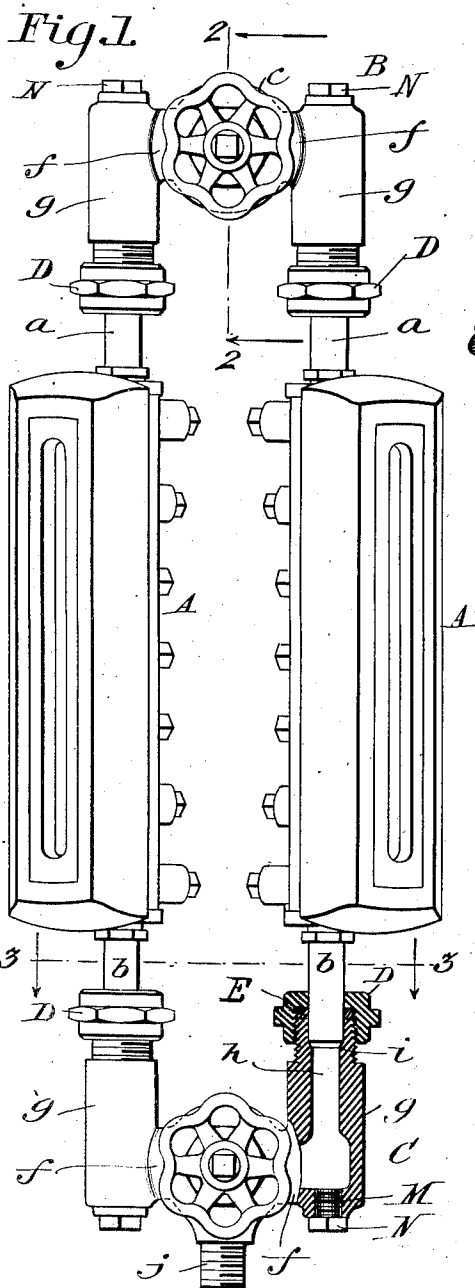


J. J. RYAN.
 DUPLEX WATER GAGE.
 APPLICATION FILED JUNE 15, 1911.

1,040,020.

Patented Oct. 1, 1912.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN J. RYAN, OF HOUSTON, TEXAS.

DUPLEX WATER-GAGE.

1,040,020.

Specification of Letters Patent.

Patented Oct. 1, 1912.

Application filed June 15, 1911. Serial No. 633,305.

To all whom it may concern:

Be it known that I, JOHN J. RYAN, citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented new and useful Improvements in Duplex Water-Gages, of which the following is a specification.

My present invention pertains to duplex water gages, and consists in a certain double water gage characterized by simplicity and durability of construction, joint and unobstructed communication between the upper and lower ends of the two glasses and the boiler, and the facility and thoroughness with which the glasses can be cleaned without detaching the gage from the boiler or putting the boiler out of commission.

My novel gage is also characterized by controlling valves that cannot be accidentally screwed out or lost and thereby give rise to the escape of hot water or steam, all as hereinafter described and claimed.

In the accompanying drawings which are hereby made a part hereof: Figure 1 is a view, partly in front elevation and partly in section of my novel duplex water gage. Fig. 2 is a view, partly in elevation and partly in section, of one of the controlling valves; the sectional part being taken in the plane indicated by the line 2—2 of Fig. 1. Fig. 3 is a horizontal section taken in the plane indicated by the line 3—3 of Fig. 1, looking downward.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which:

A A are gages which are preferably, though not necessarily, of the well known Klinger type illustrated, and are, by preference, so arranged that the glass of one can be conveniently viewed by a locomotive engineer and the glass of the other by the fireman. Each of the said gages is provided with upper and lower tubular extensions *a* and *b*, alined with the glasses thereof.

B is an upper coupling body for effecting connection between the tubular extensions *a* and the steam space of a boiler, and C is a lower coupling body for making communication between the tubular extensions *b* and the water space of a boiler. Each of the said bodies comprises a valve casing *c* containing a seat *d*, an exteriorly threaded projection *e* extending from the inner end of the casing and designed to be screwed into the boiler wall, and arms extending

laterally in opposite directions from the casing, as indicated by *f*, and then vertically up and down from the outer ends of the arm portions *f*, as indicated by *g*. The lower ends of the arm portions *g* of the upper body B and the upper ends of the arm portions *g* of the lower body C are exteriorly threaded as shown, for the connection of threaded glands D which serve to connect the said bodies and C to the tubular extensions *a* and *b*, respectively, and also serve to hold packing washers E; the latter feature being illustrated near the lower end of Fig. 1. I would also have it understood that each of the arm portions *g* of the lower coupling body C is interiorly reduced, as indicated by *h* to afford a support *i* for one water gage A, and that the coupling body C also differs from the upper coupling body B in that it is provided with an exteriorly threaded projection *j* that depends from its casing *c* and is designed for the connection of a valved pipe (not shown) that is to be used to carry off water incidental to flushing and cleaning of the glasses of the gage.

In each of the coupling bodies B and C is arranged a controlling valve F which is peculiar in that its body *k*, extends laterally from its stem *l*, as indicated by *m*, this being advantageous because it precludes accidental outward screwing and loss of the valve, and the escape of steam or hot water that would attend such displacement of the valve.

The arm portions *g* of the upper coupling body B are provided in their upper ends, and the arm portions *g* of the lower coupling body C are provided in their lower ends with threaded apertures M. These are arranged in vertical alinement with the tubular extensions *a* and *b* and the glasses in the gages A, and are normally closed by removable plugs N. From this it follows that incidental to the cleaning of the duplex gage and when the plugs N are removed, swabs or the like may be run through the glasses to facilitate and render thorough the cleaning thereof.

As will be gathered from the foregoing, the two gages A are connected to and furnished communication with the steam space of a boiler by one coupling body containing a single controlling valve, and that the two gages are connected to and furnished communication with the water space of a boiler

by one coupling body containing a single
controlling valve; also, that when said
valves are closed the communication be-
tween the boiler and the gages A is com-
pletely and otherwise effectually interrupted.
From this it follows that cleaning of the
glasses of the gage may be freely accom-
plished in the manner described without
putting the boiler out of commission or de-
taching the duplex gage from the boiler
wall. It will further be gathered from the
foregoing that my novel duplex gage as a
whole is simple and not liable to get out of
order in use, and that the gage is strong and
well adapted to withstand rough usage,
largely because of the utilization of the
lower coupling body C as a support for the
gages A.

Having described my invention, what I
claim and desire to secure by Letters-
Patent, is:

The herein described duplex water gage,
comprising gages arranged side by side and
each having a tubular extension at its up-
per end and a tubular extension at its lower
end; an upper coupling body having a valve
casing containing a seat and also having a
threaded projection extending from the in-
ner end of the casing and further having
lateral arms at opposite sides of and in com-
munication with the casing and made up of
portions disposed at right angles to said
threaded projection, and depending portions

in the upper ends of which are vertically
disposed apertures; a lower coupling body
having a valve casing containing a seat and
also having a threaded projection extending
from the inner end of the casing and fur-
ther having lateral arms at opposite sides of
and in communication with the casing and
made up of portions disposed at right angles
to said threaded projection, and upwardly
extending portions in the lower ends of
which are vertically disposed apertures, the
interiors of the said upwardly extending
portions being reduced at an intermediate
point to afford supports for the lower tubu-
lar extensions of the gages; the interiors
of the vertical arm portions of both cou-
pling bodies being unobstructed throughout
their length; removable means normally
closing the said vertically disposed apertures
of the coupling bodies; a tubular projection
depending from the valve casing of the
lower coupling body; and valves arranged
in the valve casings of the coupling bodies
and having handles disposed in front of
said casings.

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

JOHN J. RYAN.

Witnesses:

M. NICHOLSON,
GEO. McCORMICK.