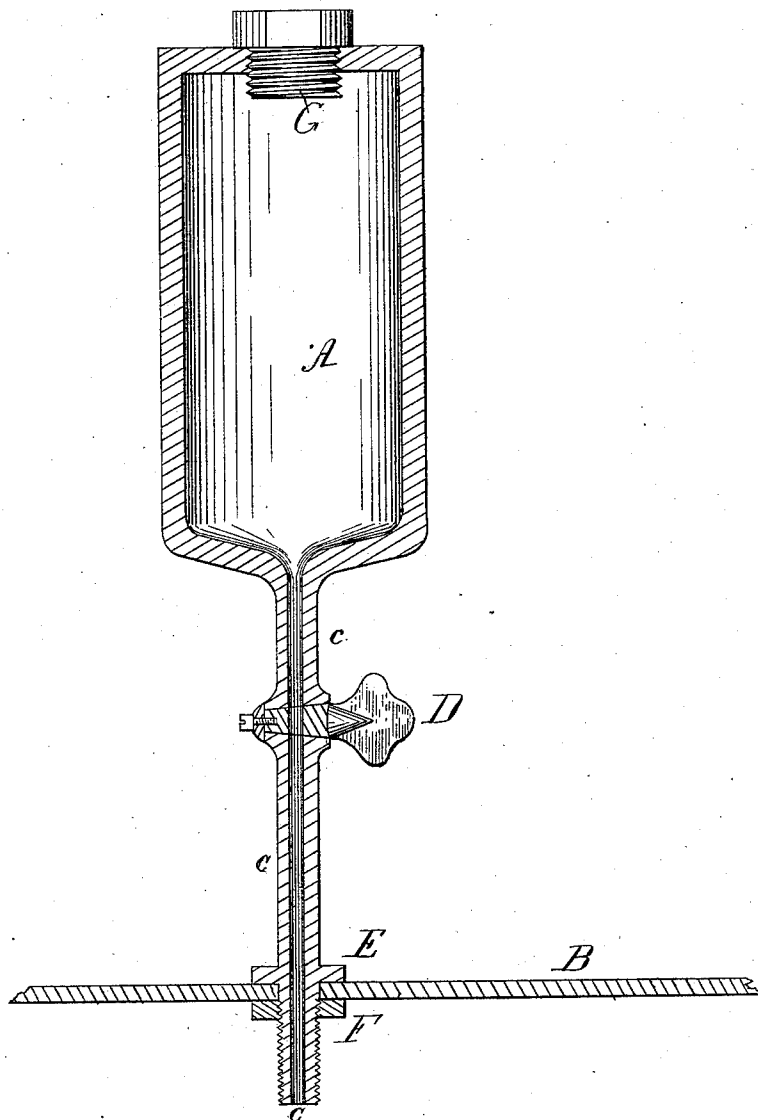


(No Model.)

J. F. PETERS.
BOILER COMPOUND FEEDER.

No. 307,220.

Patented Oct. 28, 1884.



Attest:
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UNITED STATES PATENT OFFICE.

JAMES F. PETERS, OF IRONTON, OHIO.

BOILER-COMPOUND FEEDER.

SPECIFICATION forming part of Letters Patent No. 307,220, dated October 28, 1884.

Application filed April 26, 1884. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. PETERS, a citizen of the United States, residing at Iron-
ton, in the county of Lawrence and State of
Ohio, have invented a new and useful Method
of and Apparatus for Supplying Chemical
Compounds to Boilers, of which the following
is a specification.

My invention relates to improvements in
that class of attachments for steam-boilers
which are employed for supplying the same
with chemical compounds for the purpose of
removing or of preventing the formation of
incrustation or "scale."

Heretofore such compounds have sometimes
been fed through the man-holes or other ap-
ertures in the boilers, or they have been mixed
with the feed-water, so as to be fed with it.
Both of these methods are defective, for the
opening and closing of a man-hole or other
aperture in a boiler is troublesome, takes time,
and the boiler cannot be used during the op-
eration. Therefore these compounds, when
fed through such apertures, have been fed in
large charges, with long intervals between the
charges, the intervals being sometimes a week,
a fortnight, or even a month in length. A
chemical compound so fed is, to a large extent,
wasted, and is inefficient to prevent or remove
scale or incrustation. The charge is in excess
of the requirements of the water in the boiler
at first, and the chemicals soon lose their effi-
ciency, being diluted by the fresh water fed
into the boiler, and being removed with the
dirty water drawn from the boiler. Conse-
quently the water has none of the compound
mixed with it during the greater part of the
time between two chargings, and incrustation
is not prevented. When the compounds are
mixed with feed-water, they are also wasted
and lose much of their efficiency, because they
do not completely dissolve in or mix freely
with cold water, but require the heat of the
boiler to effect their proper and effective so-
lution and to develop their powers of prevent-
ing incrustation, and when mixed with cold
water they are to some extent changed in their
chemical relations. Therefore mixing them
with feed-water has not proved satisfactory.

An apparatus has before been devised for
application to the top of a boiler, independ-

ently of the man-hole thereof, such apparatus
being closed at all points except at its bottom,
where it is connected to the boiler. Under
that construction it is necessary to detach the
apparatus from its position upon the boiler
when the apparatus is to be supplied with the
scale-preventing compound, and this detach-
ment renders it necessary to discontinue the
use of the boiler as a source of steam-supply,
just as when the compound is supplied to the
boiler through the man-hole thereof.

The object of my invention is to provide an
apparatus which can be easily attached to any
boiler, and by which boiler compounds can
be fed in small charges at short intervals while
the boiler is being used. I attain this object
by the mechanism illustrated in the accom-
panying drawing, which is a vertical section
showing my boiler-compound feeder attached
to a cylindrical horizontal boiler.

A is a cylindrical vessel capable of holding
about a pound-weight of any boiler compound.
B is the boiler. C is a tube formed with and
being a continuation of receiver A. D is a
steam cock or valve by which communication
between receiver A and boiler B is opened or
closed at pleasure. E is a flange formed on
tube C and resting on the shell of boiler B.
F is a screw-nut screwed onto tube C, within
boiler B, to fasten the feeder to the boiler. G
is a movable steam-tight cover for receiver A.

I have shown cap G as a common screw-cap;
but any known steam-tight cover will answer;
also, any known means for fastening fixtures
to boilers may be used instead of flange E and
nut F; and any equivalent for a steam-cock
may be used instead of steam-cock D.

When charging this feeder, I close tube C by
turning valve D, take off cap G, put the charge
in receiver A, replace cap G steam-tight, and
then open tube C by turning valve D. If the
charge be of a liquid, it flows into the boiler,
steam taking its place. If it be of a solid,
the steam soon liquefies it. It flows into the
boiler and steam takes its place. I repeat
the charging at least every day, so as to keep
the water in the boiler constantly supplied
with the chemicals to prevent incrustation.

It will be understood that the lower end of
the tube C within the boiler extends below the
ordinary water-level, so that the compound

will pass by its own gravity into the lower portion of the water-space.

What I claim as my invention, and desire to secure by Letters Patent, is—

- 5 1. The combination, with a boiler, of a receiver, A, secured to the top of such boiler, and provided with a single inlet-opening at its upper extremity, and with a discharge-opening at its lower extremity, such lower ex-
to tremity terminating within the boiler at a considerable distance below the top of the same, substantially as shown and described.

2. In combination with a boiler, a receiver, A, provided with a central inlet-opening at its top which is adapted to be closed by a cap or 15 valve, G, with an outlet-opening which is adapted to be closed by a single valve or cut-off, D, and with a discharge-tube which extends downwardly from the chamber of the receiver into the body of the boiler.

JAMES F. PETERS.

Witnesses:

HALSEY C. BURR,
F. M. LE PAGE.