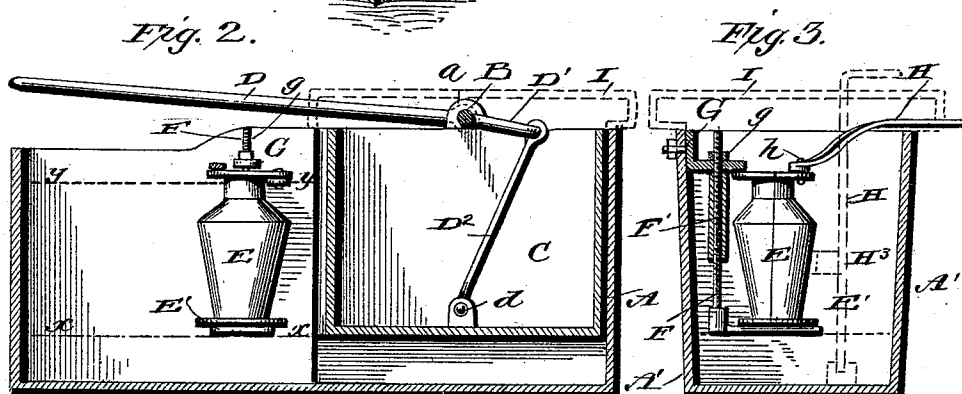
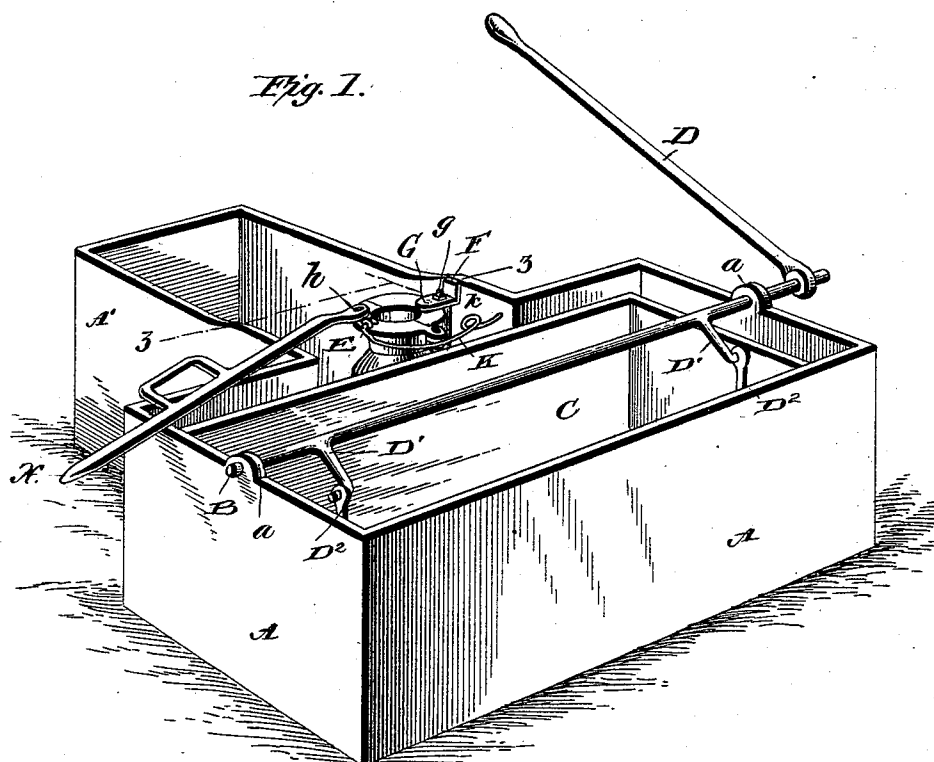


(No Model.)

H. C. SCHRADER.
MOLD MOISTENER.

No. 526,948.

Patented Oct. 2, 1894.



Witnesses:

L. C. Hill
E. A. Bond

Inventor

Henry C. Schrader
by E. B. Stocking
Attorney.

UNITED STATES PATENT OFFICE.

JOHN E. SCHLIEPER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE
STIRLING COMPANY, OF CHICAGO, ILLINOIS.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 526,947, dated October 2, 1894.

Application filed June 28, 1894. Serial No. 516,010. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. SCHLIEPER, of
Pittsburg, Pennsylvania, have invented a new
and useful Improvement in Steam-Boilers, of
5 which the following is a specification.

The object of my invention is to improve
the Stirling boiler; and the invention consists
in the features and combinations hereinafter
described and claimed.

10 The accompanying drawing represents a
vertical section taken through the fire box
from front to rear of my improved boiler.

In constructing my improved boiler, I provide
a fuel chamber, A, of any desired form
15 and size, preferably covering it with an arch,
a, which also acts to deflect the heated gases
and products of combustion into the furnace
chamber, or boiler proper, for the purpose of
raising the temperature and generating steam
20 therein.

Arranged in the upper part of the boiler
are two large steam and water drums, B B',
which have steam communication by means
of the pipe, b, and water communication
25 through a secondary water drum, C, by means
of the pipes, c c'—these connecting pipes being
direct or circuitous as desired. The secondary
water drum, which may be of any desired
size, is preferably placed at a lower level
30 than the main steam and water drums, so as
to reduce the water level therein and thus
prevent priming or foaming. It also provides
additional heating surface and aids in regulating
the circulation.

35 Arranged in the lower part of the boiler are
two mud drums, D D', having water communication
with each other by means of the pipe, d, which
may be direct or circuitous as desired. The rear
elevated steam and water
40 drum, B, is connected with the lower mud
drum, D, by means of a bank of tubes, E, and
the front elevated steam and water drum, B',
is connected with the front lower mud drum,
D', by means of a bank of tubes, E', while the
45 secondary elevated water drum is connected
with one of the lower mud drums, preferably
the middle one, by means of a series of
tubes, e.

The feed water is introduced through an
50 elevated feed water drum, G, which is connected
with a rear lower mud drum, G', by

means of a bank of tubes, g, so that water may
pass from the elevated feed drum into the
rear lower mud drum. This rear mud drum
has communication with the forward mud
55 drum or drums by means of a tube or series
of tubes, g', this communication being direct
or circuitous as desired. The elevated feed
water drum also has steam communication
with the forward elevated steam and water
60 drums, by means of a tube or tubes, g², which
furnish an outlet for steam generated therein
and in the rear bank of tubes. Water is supplied
to the elevated feed water drum, from
any suitable source of water supply, by means
65 of a supply pipe, H, which may be provided
with a disk, h, inside the drum, for the purpose
of separating the water and conducting
it to the sides of the drum.

The front bank of tubes may be provided
70 with a baffle plate, I, for the purpose of guiding
the heated gases and products of combustion
up through the tubes, until it contacts
both the elevated water and steam drums and
the secondary water drum. This front baffle
75 plate may have an extended portion, i, to direct
the heated gases around the tubes extending
down from the secondary drum as they pass to
the second bank of tubes, behind which is
arranged another deflecting plate, K, 80
which extends down almost to the lower mud
drum, so as to deflect or guide the heated
gases or products of combustion down through
such bank of tubes until they contact the
lower mud drums, after which they may pass
85 up through the rear bank of tubes, and out
through the chimney or stack, L.

In operation, the water enters the upper
feed drum and passes down into the rear mud
drum, being slightly warmed or heated in its
90 passage, so that a portion of its sediment may
be precipitated before it passes into general
circulation. The water then passes on into
the forward mud drum or drums, up into the
elevated drums, across from one drum to another,
95 down again to the mud drums, and so on
continuously—allowance being of course
made for evaporation. During this general
circulation, the secondary drum, being so arranged
that a large part of the water passes 100
through it, performs the functions above
stated—reduces the water level, aids in regu-

box C can be raised or lowered within the outer box A. This inner box may be weighted in any suitable manner to make it the proper weight.

5 E is the mold which may be of any preferred form of construction and it is supported upon the platform or support E' which is arranged within the extension and is rendered vertically adjustable by means of the screw rod F to whose lower end it is attached, 10 the said rod being passed through the tube F' depending from the bracket G secured within the extension, and upon the screw rod above this bracket is an adjusting nut g as 15 shown best in Fig. 3.

The mold is made in two parts one of which is hinged or pivoted in the usual manner and this movable part is designed to be operated by the lever H which is connected thereto as 20 at h in Figs. 1 and 3, said lever being provided with a loop portion H' 25

movable part of the mold in any suitable way and its other end attached to some fixed part, as to the side wall of the extension as shown, the spring being provided with one or 60 more coils k as shown.

Instead of the lever H being of the form shown in Fig. 1 and in Fig. 3 in full lines, it may be as shown by dotted lines in Fig. 3 wherein it is shown as a vertical lever pivotally 65 mounted at its lower end and its upper end turned horizontally to form a foot pedal by which it may be operated. It is suitably connected with the movable part of the mold by a crank arm or other connection H' as shown 70 so that the movement of the lever will close the mold against the tension of the spring as will be readily understood.

What I claim as new is—

1. The combination with