

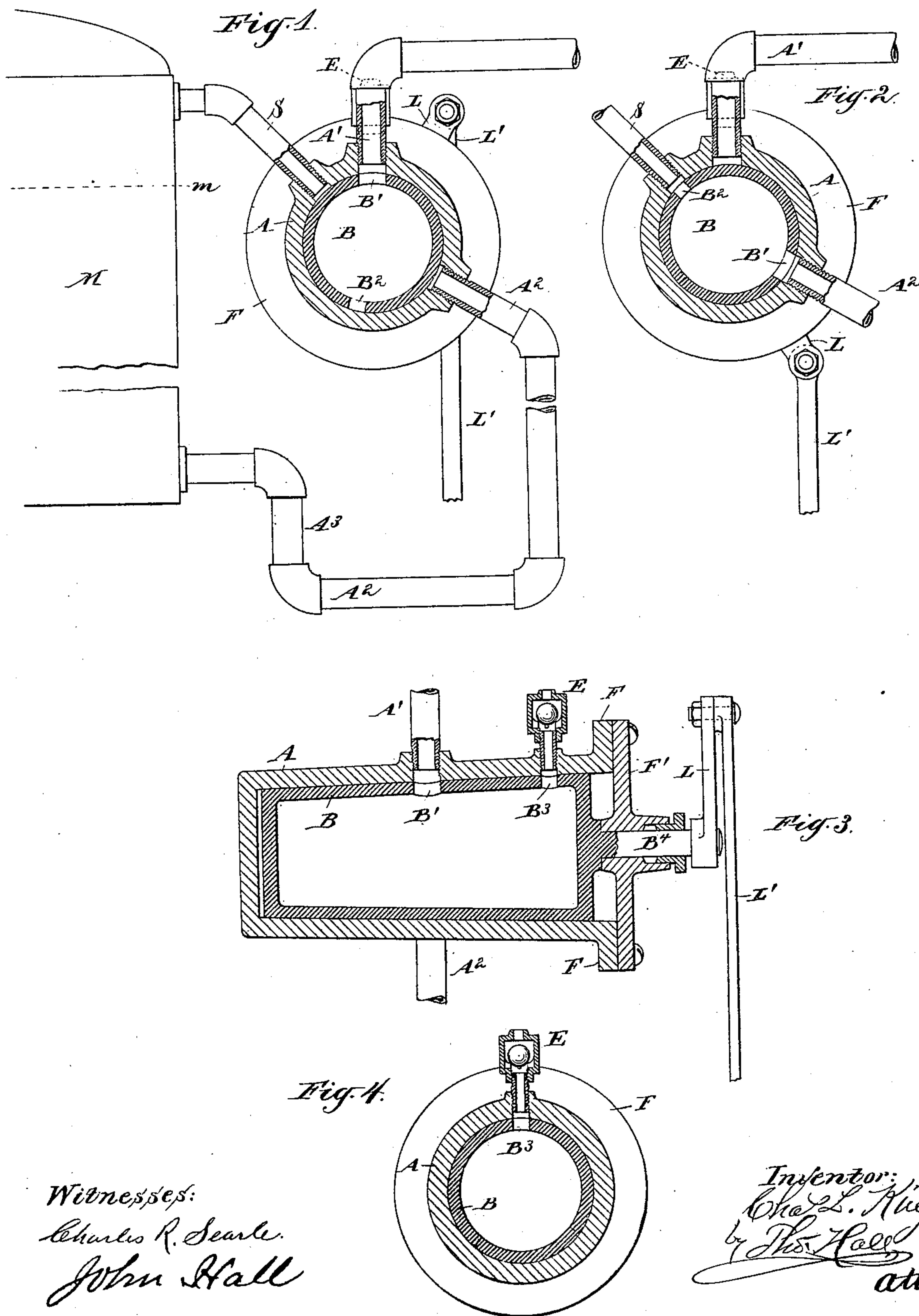
No. 673,543.

Patented May 7, 1901.

C. L. KING.
BOILER FEEDER.

(Application filed June 15, 1900.)

(No Model.)



Witnesses:
Charles R. Searle.
John Hall

Inventor:
C. L. King
by Thos. Hall
att.

UNITED STATES PATENT OFFICE.

CHARLES L. KING, OF NEW YORK, (BROOKLYN,) NEW YORK.

BOILER-FEEDER.

SPECIFICATION forming part of Letters Patent No. 673,543, dated May 7, 1901.

Application filed June 15, 1900. Serial No. 20,435. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. KING, a citizen of the United States, residing in Brooklyn borough, city and State of New York, have
5 invented an Improvement in Boiler-Feeders, of which the following is a specification.

My invention relates to supplying steam-boilers with water by a new and automatic device instead of by the usual methods of
10 pumps or injectors. By this new method the water in the boiler can be kept at a proper height without care on the part of the engineer.

The accompanying drawings, forming part
15 of this specification, show the general form and detail of the invention, in which—

Figure 1 is an elevation of the feeder in connection with boiler, partly sectional. Fig. 2 is the same view of section with parts in
20 different position. Fig. 3 is a sectional elevation at right angles to Figs. 1 and 2. Fig. 4 is a section through valve E as shown in Fig. 3.

Like letters refer to like parts.

25 The main portion of this invention consists of an outer shell and an inner chamber, the outer shell A being bored out, (preferably larger at one end than the other,) and an inner shell or chamber B, turned and fitted
30 steam and water tight into shell A and capable of being rotated or oscillated in relation to shell A.

In the outer shell A is an opening A', with water-pipe connection from reservoir and an
35 opening with pipe A², communicating with water-space in boiler M.

S represents an opening in shell A and pipe connection to steam-space in boiler M.

40 E is an opening through shell A, with check-valve, as shown in Figs. 3 and 4.

In chamber B are openings corresponding to the openings in shell A.

In Figs. 1 and 3 the opening B' in chamber B is shown opposite the water-supply opening A', and in Figs. 3 and 4 is shown the opening B³, opposite the valve-opening E.
45

In Fig. 2 the opening B' is shown opposite opening into pipe to boiler A².

50 B⁴ is a projecting stem or shaft of B, passing through cap-plate F' and through stuffing-box.

F is a flange on shell A, to which F' is secured.

L is a lever fastened to B⁴ and operated by connecting-rod L', the rod being actuated
55 by any suitable machinery.

In Fig. 1 the water-chamber B is shown in position in relation to water-level in boiler.

The action of this device is as follows: The water-inlet passage A' being open to chamber B through B', as shown in Figs. 1 and 3, and the opening B³ being opposite valve E, the other openings being closed, the water can flow by gravity or pressure into the chamber and any air or gas can find exit through
65 valve E until the water reaches the floating valve and closes the opening. This operation of filling is done while the lever is moving up to position shown in Fig. 1 and while in that position and while the lever moves
70 downward, and with it the chamber B, rotating in shell A, until the opening at A' is closed by the solid wall of B passing the opening A'. The lever and the chamber continue to move until the opening B' in chamber
75 comes opposite to opening in feed-pipe A². At the same time the opening B² will have arrived opposite opening of steam-pipe S, when the pressure of steam and water will be equalized and the water will flow down to
80 bottom of boiler. The level of the water in chamber and in boiler will be the same. When the water in the boiler is as high as the top of the chamber, as at m, the chamber will remain full, and as no more water can enter
85 the continued action of the lever and chamber will have no effect until the level is reduced, when water will flow in at each motion sufficient to supply the vacancy, so that the device can be in continual action, requiring
90 no attention from engineer to keep the water-supply in boiler at correct level.

In Fig. 1 the supply-pipe A² is shown to drop below the place where it enters the boiler, as at A³. The purpose of this is to
95 prevent excess of heat from the boiler reaching the chamber B. This can be accomplished by a sufficient drop of the supply-pipe below the boiler or by a sufficient length of supply-pipe between the chamber and boiler, and
100 under some conditions by a check-valve, thereby providing for a temperature in cham-

ber B lower than the evaporating-point and avoiding back pressure to pipe A' and consequent hindrance to water-supply.

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

In a boiler-feeder, the shell A having inlet S for steam from boiler, water-inlet A', water-outlet A², air-vent E with floating valve for closing the vent, and a pipe A² to the boiler,

a portion of the pipe being at a lower level than where it connects to the boiler, for purpose described, in combination with the inclosed oscillating chamber B having openings B', B², and B³ substantially as shown.

CHAS. L. KING.

Witnesses:

GEO. C. SEXTON,
JOHN HALL.