

(No Model.)

H. B. BAKER.
STEAM BOILER CLEANER.

No. 332,036.

Patented Dec. 8, 1885.

Fig. 1.

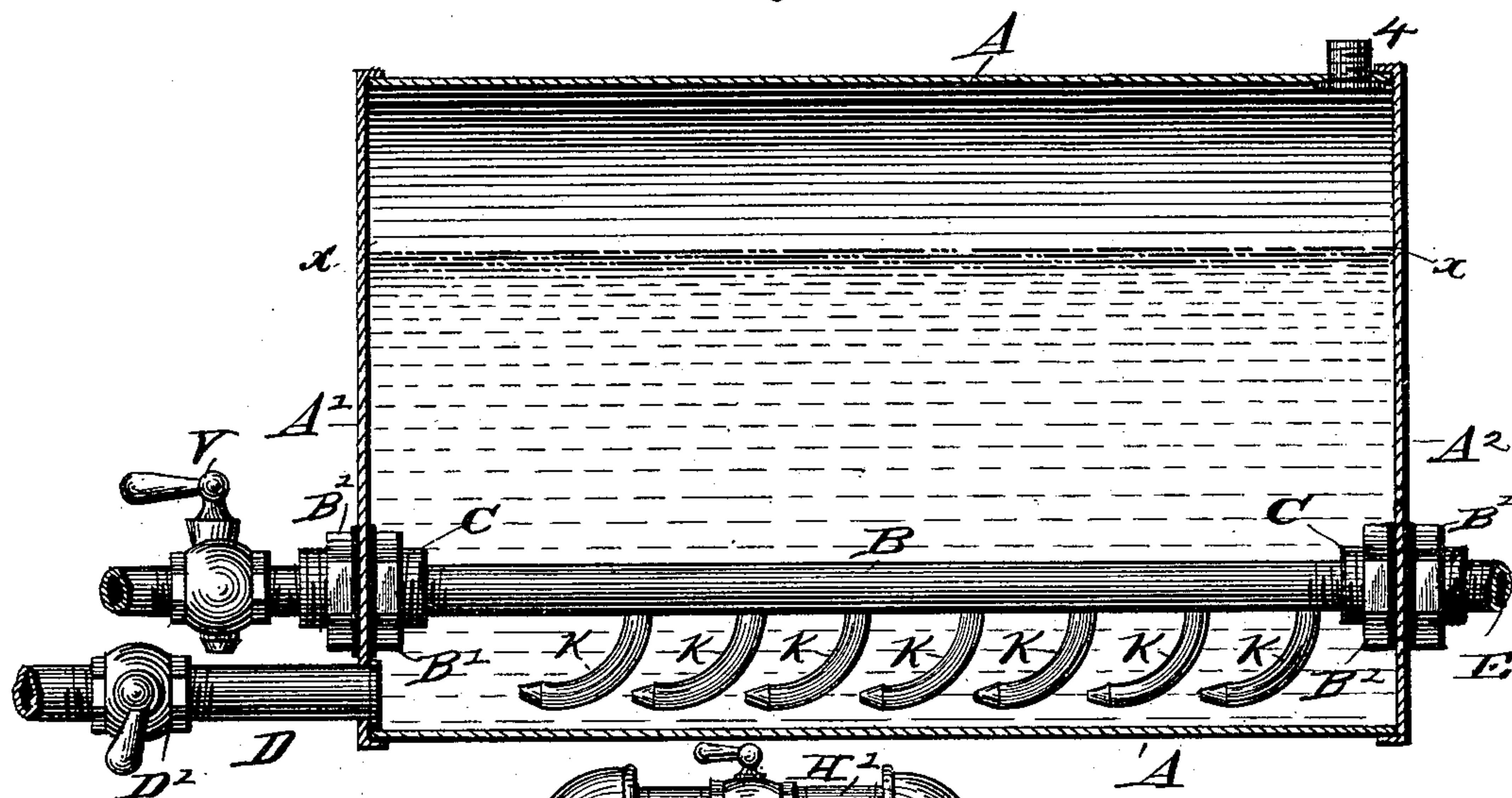


Fig. 2.

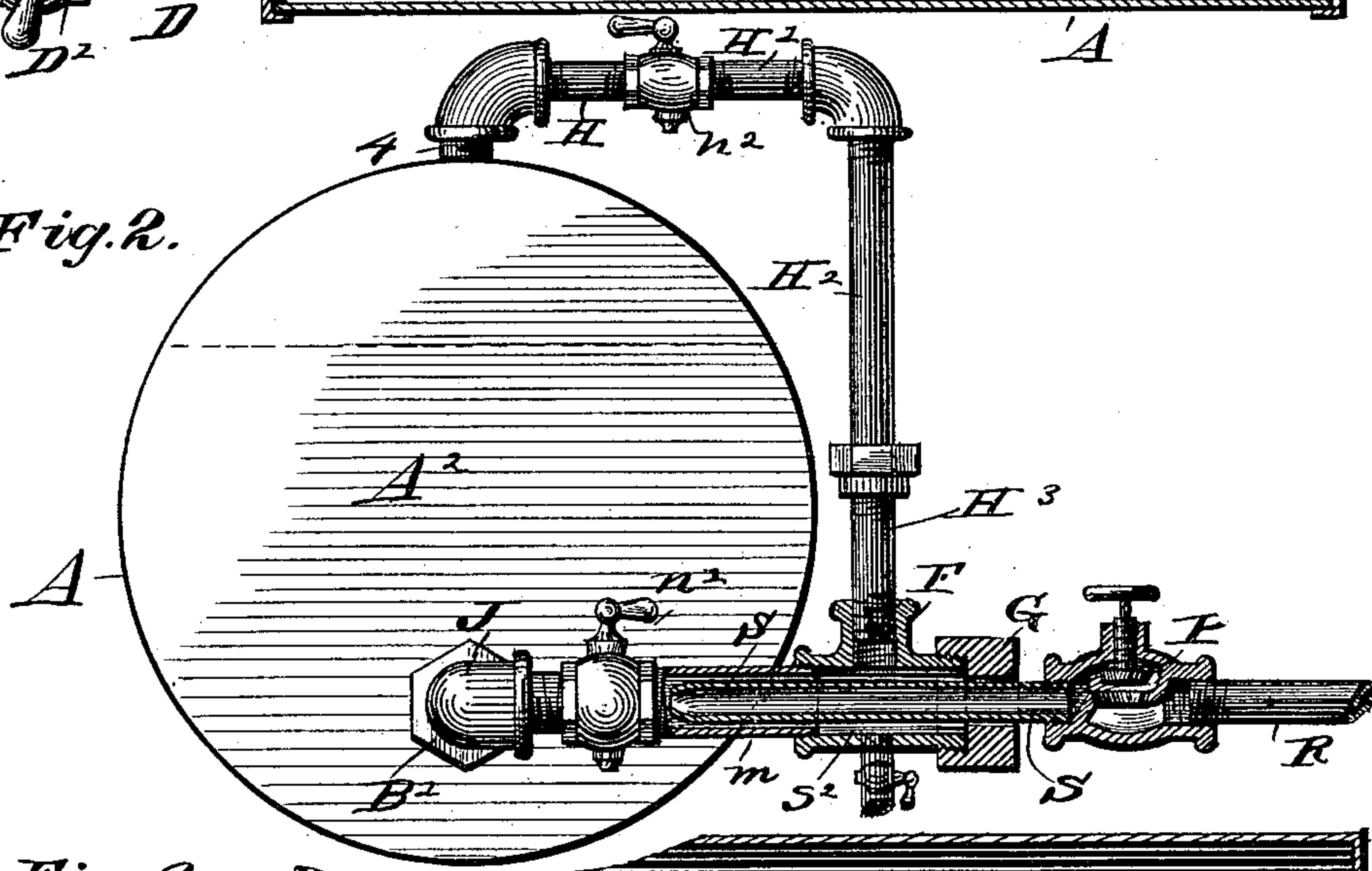
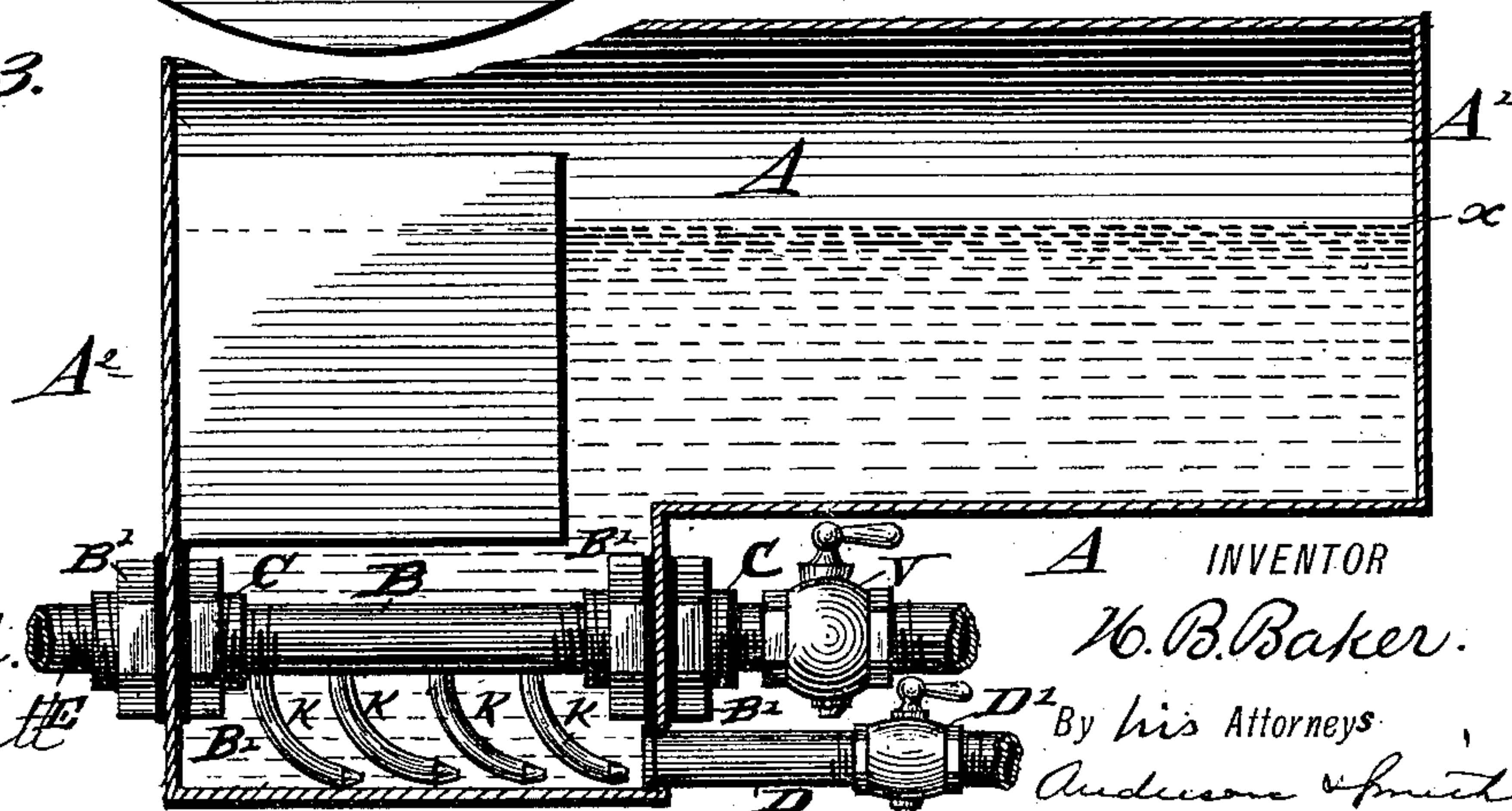


Fig. 3.



WITNESSES
R. C. Massey.
B. Fugitt.

INVENTOR
H. B. Baker.
By his Attorneys
Anderson & Smith

UNITED STATES PATENT OFFICE.

HENRY B. BAKER, OF HULL'S, OHIO.

STEAM-BOILER CLEANER.

SPECIFICATION forming part of Letters Patent No. 332,036, dated December 8, 1885.

Application filed September 21, 1885. Serial No. 177,748. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. BAKER, a citizen of the United States, residing at Hull's, in the county of Athens and State of Ohio, have invented certain new and useful Improvements in Steam-Boiler Cleaners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a vertical section. Fig. 2 is a front elevation, partly in section. Fig. 3 is a sectional view of a modification.

My invention relates to steam-boiler cleaners; and it consists in the construction and novel combination of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

Referring by letter to the accompanying drawings, A designates the steam-boiler, and the dotted line *x x* designates the top water-line in the boiler.

A' designates the back end or head of the boiler, and A² the front end or head of the same.

B designates a horizontal pipe that traverses the boiler from end to end near the bottom of the same, and projects beyond both heads of the boiler, except in cases where the device is put into portable boilers, or boilers having an iron fire-box; then the horizontal pipe B extends from end to end of the boiler and through the fire-box.

C C are thimbles having threads cut both on the inside and outside. Said thimbles pass through the heads or ends of the boiler or fire-box, as the case may be, and screw onto the pipe B. Nuts B' B' B' and B' are screwed onto the outside of said thimbles and up against packing, for the purpose of making the joints tight and of holding the pipe B firmly in its place.

kkkk, &c., designates small curved jet-pipes, which are screwed into the under side of the pipe B, and said pipes *k*, &c., curve in the direction of the blow-off pipe D at the back end of the boiler or fire-box, and their lower or free ends extend to quite near the bottom of

the boiler or fire-box, and their lower ends are reduced in size in proportion to the amount of steam and water that is required to pass through them, and their lower ends are set so as to throw the water and steam over the entire surface of the bottom of the boiler. The object of these short curved pipes *k*, &c., is to permit the water and steam that are forced into the pipe B to pass through them and agitate the water in the boiler and create a current along the bottom of the boiler, and thereby move all sediment, dirt, and accumulating scales in the direction of and up to the blow-off pipe in the back end of the boiler or fire-box, as the case may be, where the same can be blown out through the blow-off pipe D, and by opening the blow-off occasionally and letting it blow a little at a time the boiler can be kept clean all the time. The blow-off pipe D is provided with a stop-cock or valve, D', which may be opened at pleasure for this purpose.

E designates a short nipple which is screwed into the projecting end of the thimble C, to receive the elbow J, Fig. 2, the purpose of which is to set the outside pipes, valves, &c., crosswise, or at right angles with the boiler, to have them out of the way.

n' and *n*² designate stop-cocks or valves, the purpose of which is to shut off the water and steam in the boiler, in order to drain the pipes in time of cold weather.

m designates a short piece of pipe, one end of which is screwed into the stop-valve *n'*.

F designates a three-way or T, which is screwed onto the outer end of the pipe *m*.

G designates a cap-nut, which is screwed onto the outer end of the three-way or T. The said cap-nut has a hole through the same and a thread cut therein to receive the conductor-pipe.

S designates the conductor-pipe, one end of which has a thread cut on it, and this end is screwed through the cap-nut G. The other end of said conductor-pipe passes through the three-way and extends into the short pipe *m*. The purpose of the conductor-pipe S is to convey the water through the three-way pipe and past where the steam enters the three-way from the top of the boiler. The outer end of the conductor-pipe S is provided with a check-valve, P, to prevent the water and steam from

flowing back from the boiler to the pump or inspirator.

R designates a pipe to connect the force-pump or inspirator with the check-valve P and the conductor-pipe S.

H H' H² H³ designate short pieces of pipe, which are connected together by suitable joints provided for that purpose. This sectional pipe enters the boiler at the top of the same, near the front end, at 4, and extends to the three-way. The object of this pipe is to convey the steam into the three-way. The steam passes through the three-way around the outside of the conductor-pipe S, a small space, S², being provided for its passage. The steam from the top of the boiler and the water from the force-pump or inspirator come together at the end of the conductor-pipe S in the short pipe m, and pass through the cock or valve n' and into the horizontal pipe B, and through the jet-pipes k into the water near the bottom of the boiler, agitating the water, &c., as before described. At the rear end, and outside of the boiler, the pipe B is provided with a stop-cock or valve, V, the object of which is to blow out sand and dirt that collect in the back end of the pipe B, and to let the water escape from the pipe B, and to permit the same to fill with steam prior to putting on the water from the feed-pump or inspirator.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, with the steam-boiler having the blow-off pipe D and the short pipe m, of the horizontal pipe B, with the curved pipes k, the sectional pipe H, the three-way pipe F, cap-nut G, conductor-pipe S, check-valve P, and the pipe connecting with the pump or inspirator, substantially as specified.

2. The combination, with the boiler and the horizontal pipe B, with downwardly-curved jet-pipes k, of the sectional pipe H, the three-way pipe F and the conductor-pipe S, the short pipe m, and the stop-cocks or valves n', substantially as specified.

3. The combination, with the boiler having the blow-off pipe D, with cock or valve D', and the horizontal pipe B, with curved pipes k and stop-cock or valve V, of the three-way pipe F, the sectional pipe H, connecting the boiler with the three-way pipe, the conductor-pipe S, the check-valve, and the supply-pipe, substantially as specified.

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

HENRY B. BAKER.

Witnesses:

A. E. PALMER,
H. MEEK.