

(Model.)

2 Sheets—Sheet 1.

C. N. PETESCH.
Surface Feeder for Boilers.
No. 238,524. Patented March 8, 1881.

Fig. 1.

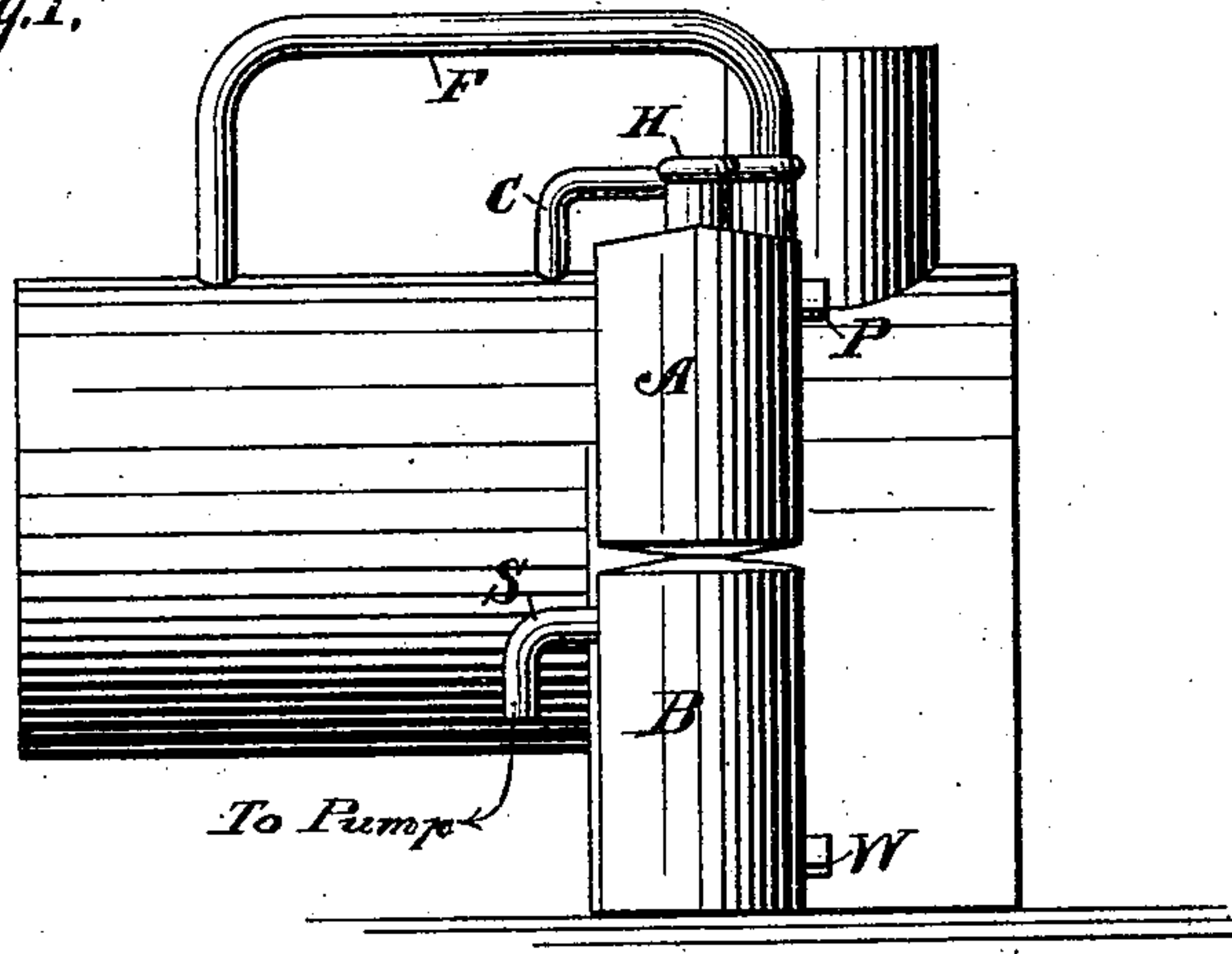


Fig. 2.

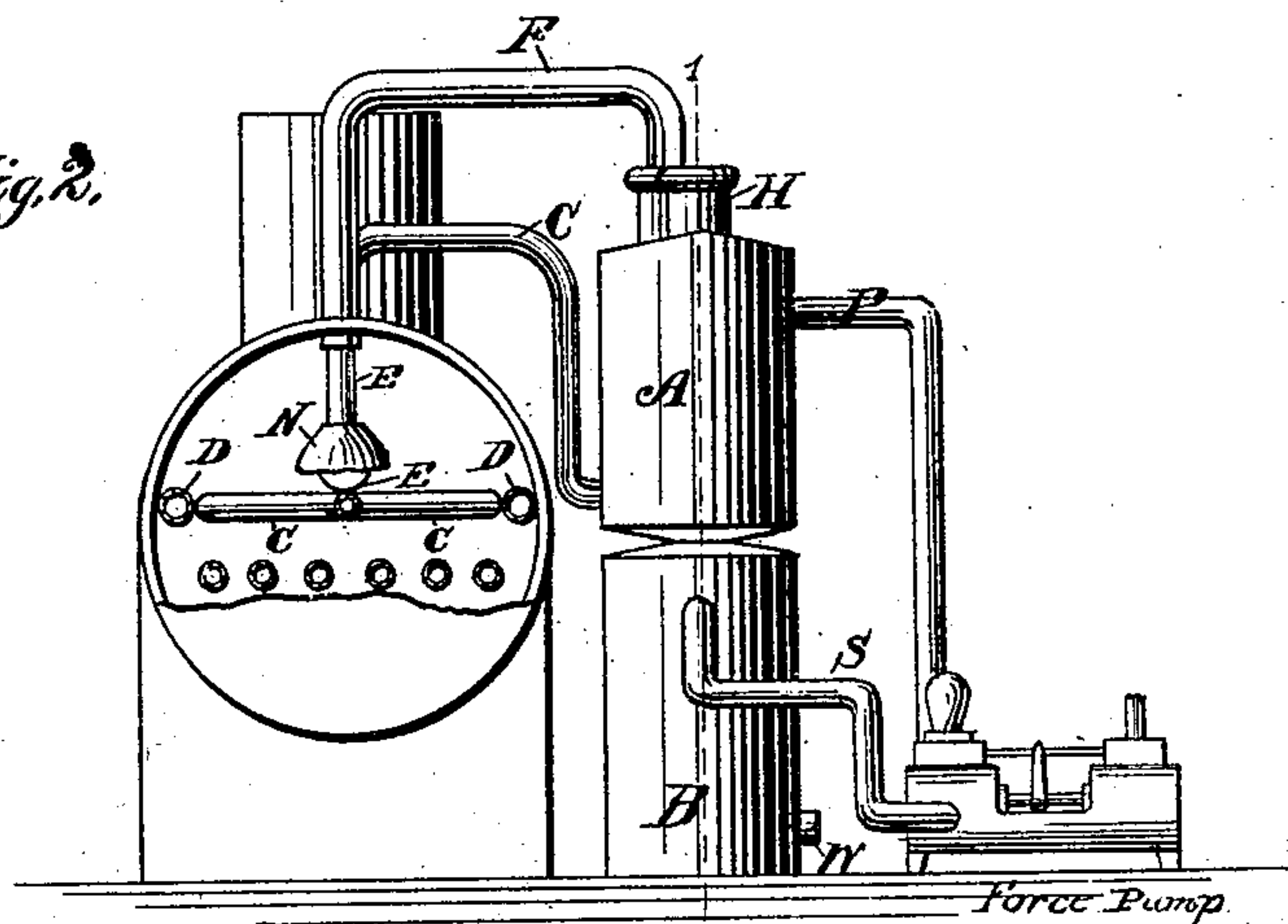
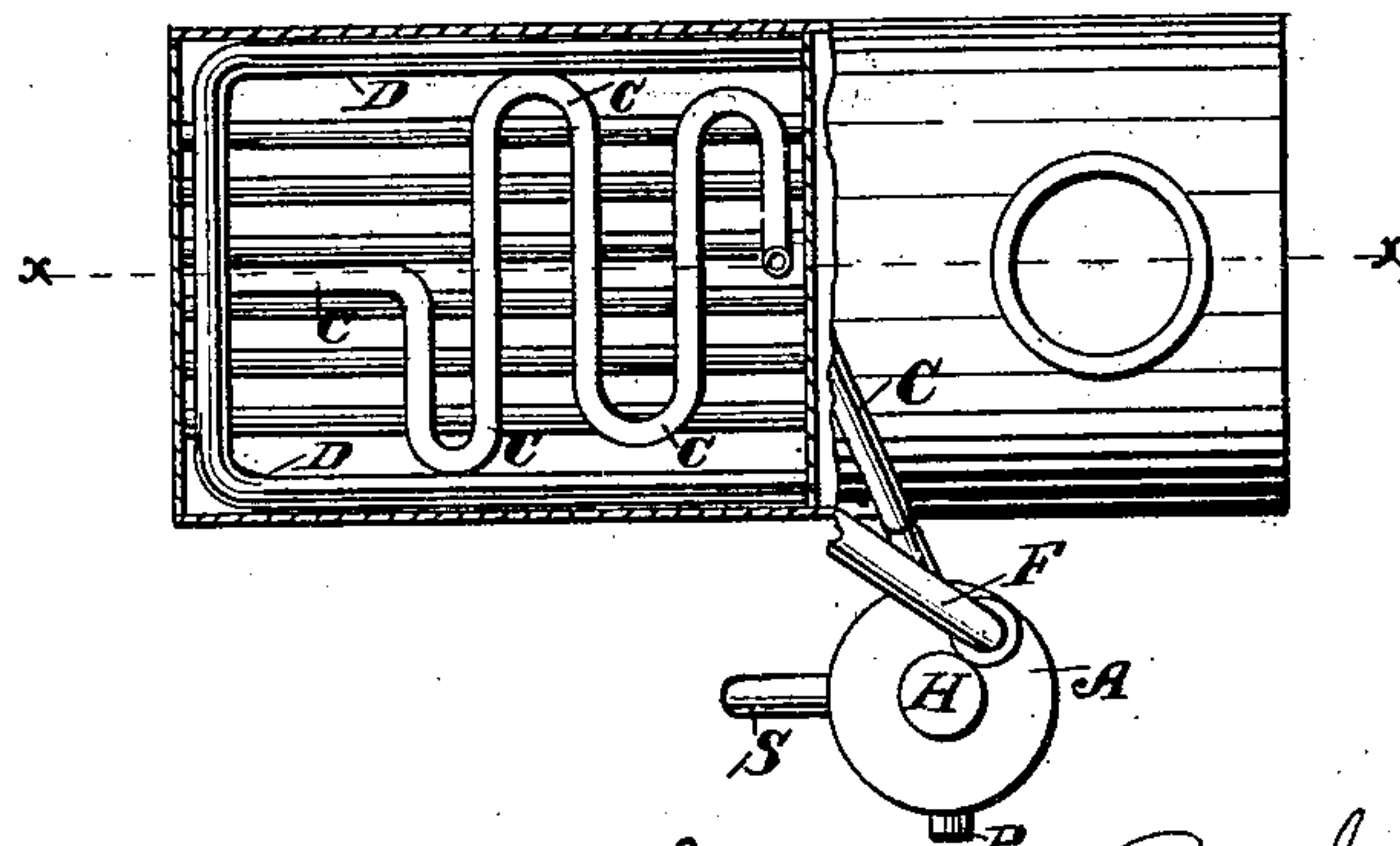


Fig. 3.



Witnesses.
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per
James J. Noble Attorney.

(Model.)

2 Sheets—Sheet 2.

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Fig. 4.

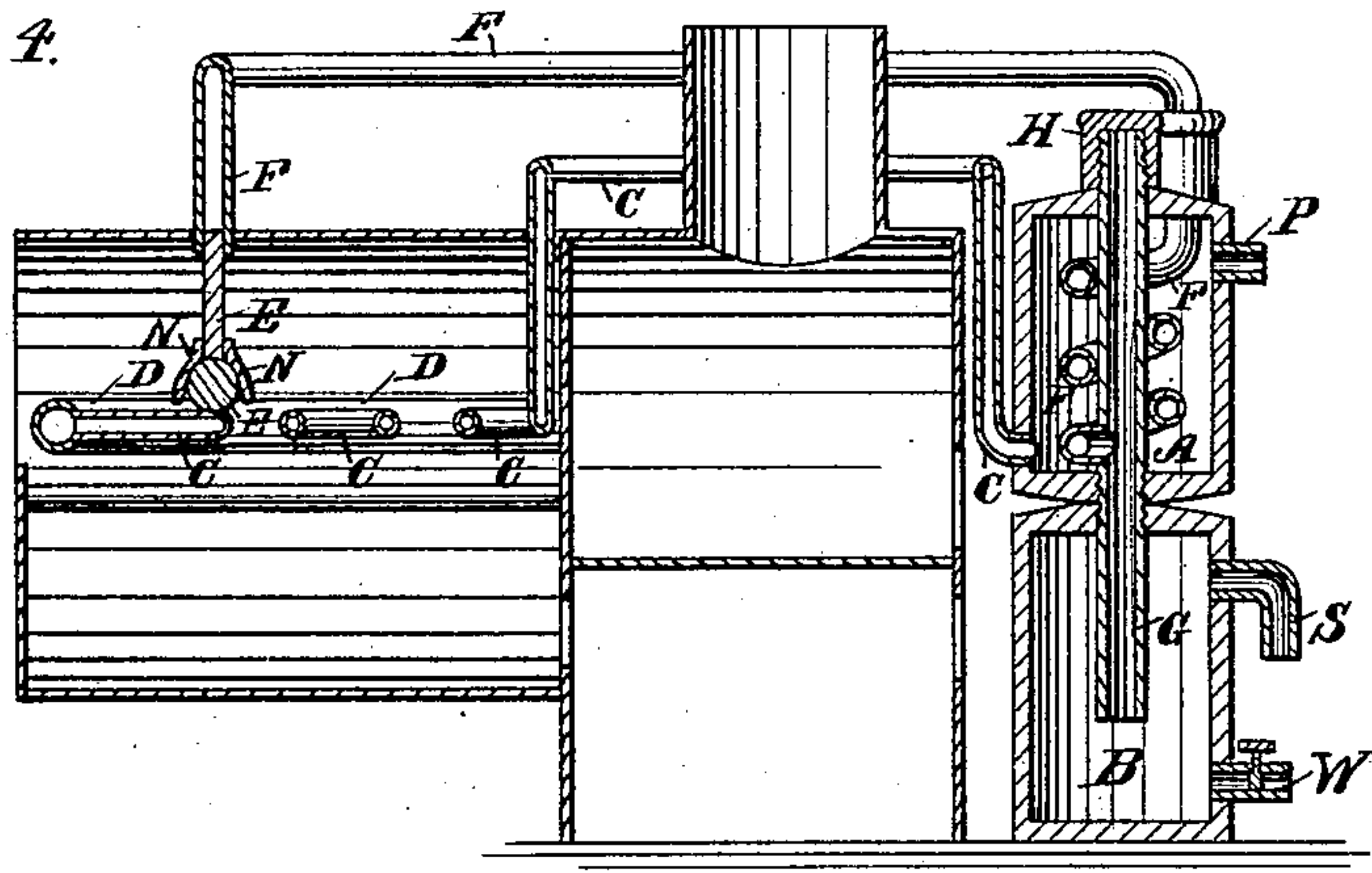
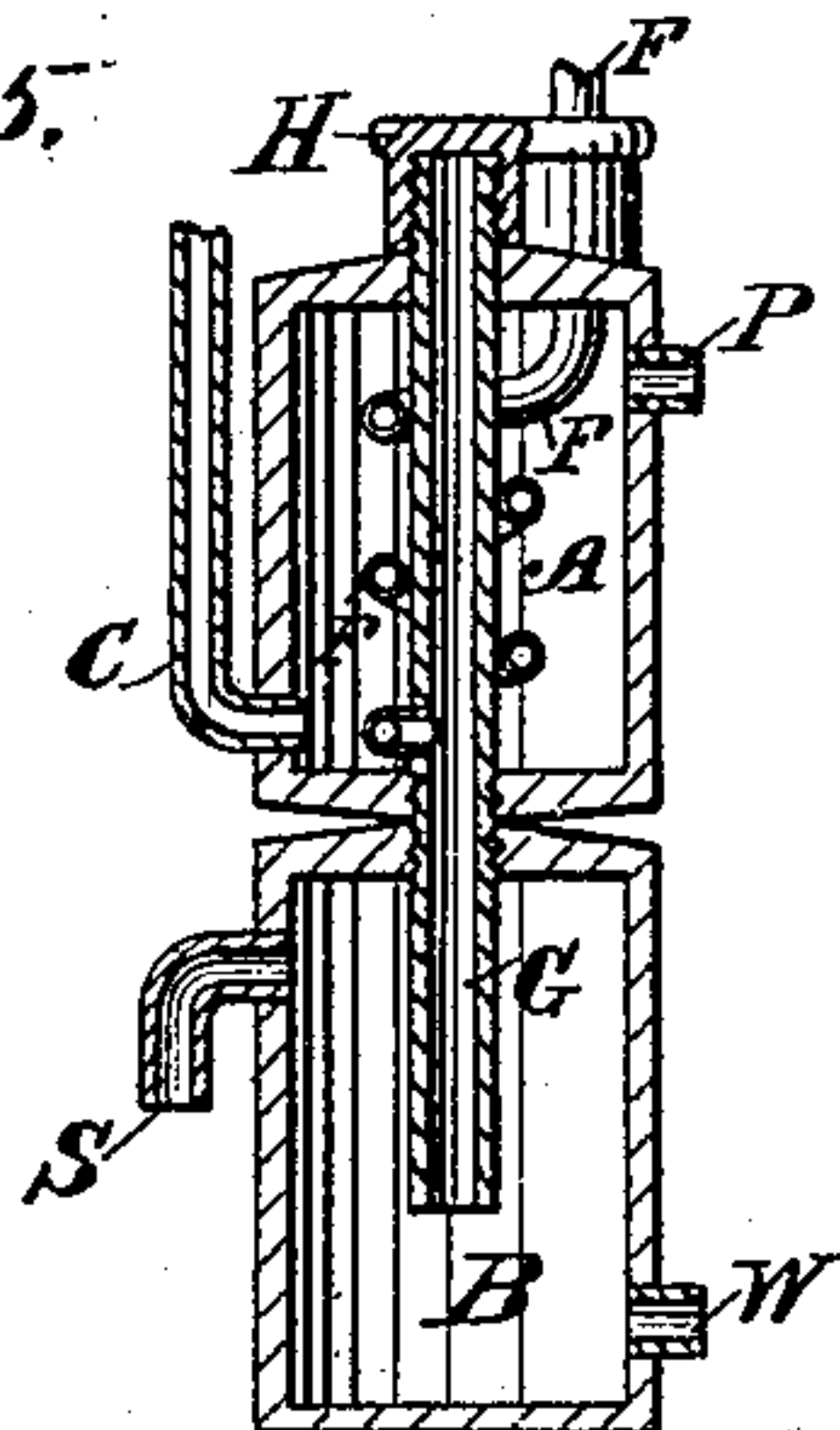


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES N. PETESCH, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
DWIGHT COOKE, OF SAME PLACE.

SURFACE-FEEDER FOR BOILERS.

SPECIFICATION forming part of Letters Patent No. 238,524, dated March 8, 1881.

Application filed November 10, 1880. (Model.)

To all whom it may concern:

Be it known that I, CHARLES N. PETESCH, a citizen of the United States, residing in the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Surface-Feeder for Boilers, called a "cleanser and feeder for steam-boilers," of which the following is a specification.

In the drawings accompanying, Figure 1 is a side elevation of a boiler provided with a surface-cleanser and feeder embodying my invention. Fig. 2 is an end view of the same, showing the end of the boiler removed. Fig. 3 is a top view of the same, shown partly in horizontal section. Fig. 4 is a vertical central longitudinal section, showing a modification in the location of some of the parts. Fig. 5 is a vertical central section of the condensing-chamber and reservoir-chamber.

My invention relates to the construction and combination of the several chambers and pipes mentioned herein, and their arrangement in and connection with any steam-boiler to prevent foaming and remove impurities from the water.

I construct a condensing-chamber, A, a reservoir-chamber, B, and pipes C and F, D, E, and G, so constructed, connected, and located with reference to the boiler that the water entering the chamber A near the top through P shall pass out near the bottom through the pipe C, and out into the boiler through the slotted pipes D D in such manner and at such places as most prevents foaming, and as it is converted into steam that portion of it loaded with impurities shall rise through E, be carried through F, around a stand-pipe, G, entering G near the bottom of the chamber A, through which pipe it shall be deposited in the reservoir B, the condensed steam to be withdrawn and kept in circulation, and the impurities to sink to the bottom of B, whence they can be removed as often as necessary through the waste-pipe W.

The pipe C is coiled as much as practicable in the boiler, so that the water passing through it may be heated before it is discharged into the boiler.

The pipe F is coiled around G, so as to secure a more perfect condensation of the steam

and deposit of impurities, while at the same time the water in A is somewhat warmed.

The pipes D D are closed at the ends, and slotted their entire length, so as to distribute the water-supply over the whole surface of the water in the boiler, and so placed against the shell of the boiler that the water, as it comes from the slots, shall be supplied at or near the surface of the water. This supply and distribution of the water tend to prevent foaming by an equalization of temperature, and to keep the impurities on the surface, to be carried off in the steam through E. The location of the pipes D D against the shell prevents foaming by diverting the flow of the rising steam toward the center of the boiler.

E is a float and pipe attached, sliding in F within the boiler, the end of the pipe spreading out into a cup, N, which, by the float, shall at all times be kept at the surface of the water, to gather up the impurities on the surface and in the rising steam.

The stand-pipe G passes through the chamber A, is closed at the top, H, and discharges into the reservoir-chamber B. Its office is to receive the contents of the pipe F and conduct them to the reservoir-chamber B.

Other boilers may be connected with the supply-pipe C outside the chamber A, and with the pipe F by connections or couplings outside the chamber A, so that the impurities from the several boilers may be deposited in the reservoir-chamber B, there being similar arrangements of pipes C, D, E, and F in the several boilers, the coil of the pipe F and the stand-pipe G being enlarged, if necessary; or a pipe, F, from each of the other boilers may enter the chamber A independently, and be coiled around and enter G like the first.

S is a pipe by which the reservoir-chamber B is connected with the suction-pipe of a force-pump, which forces the water through the pipe P into the chamber A, and through C to the boiler. By this means the water discharged into B is returned into the boiler, and the circulation of the steam through F is promoted and increased, and the impurities drawn into the cup N. The chambers A and B may be placed at the end or by the side of the boiler.

I employ any suitable form of force-pump in

connection with my feeding device, the inlet or suction pipe of the pump being connected in any convenient way with the pipe S of chamber B, and the delivery-pipe of the pump with pipe P of chamber A, as before stated, the office of the pump being the usual one of keeping up the supply and circulation of water in the boiler and apparatus, and thus make the device operative.

10 Having thus explained my invention, I claim—

1. The condensing-chamber A, in combination with the reservoir-chamber B, the stand-pipe G, and the connections or pipes P, S, and 15 W, all constructed and arranged substantially as shown and described.

2. The combination of the pipe C with the slotted pipes D D, constructed and arranged substantially as shown and described.

20 3. The combination of the pipe F and the float and pipe E with the cup N, all constructed and arranged substantially as described.

4. The combination of the float and pipe E, the pipe F, the chambers A and B, and the stand-pipe G, to collect, conduct, and deposit 25 the impurities in the water, substantially as described.

5. In a surface-feeder for steam-boilers, in combination with any suitable form of force-pump, the condensing-chamber A, the pipe C, 30 and the slotted pipes D D, located against the shell of the boiler, heating, supplying, and distributing the water, and diverting the boiling water from the sides of the boiler, substantially as described, to prevent foaming and 35 carry the impurities to the cup N.

6. In a surface-feeder for steam-boilers, in combination with any suitable form of force-pump, the condensing-chamber A, the reservoir-chamber B, with the connections P and S, 40 for the force-pump, the waste-pipe W, the stand-pipe G, the pipe C, the slotted pipes D D, the float and pipe E, with the cup N, and the pipe F, discharging into the stand-pipe G, constructed and arranged to maintain a thor- 45 ough circulation, prevent foaming, and carry off and deposit impurities, substantially as described.

CHARLES N. PETESCH.

In presence of—

GEORGE N. STONE,
JAMES J. NOBLE.