

C. N. PETESCH.
Surface-Feeder for Steam-Boilers.

No. 223,380.

Patented Jan. 6, 1880.

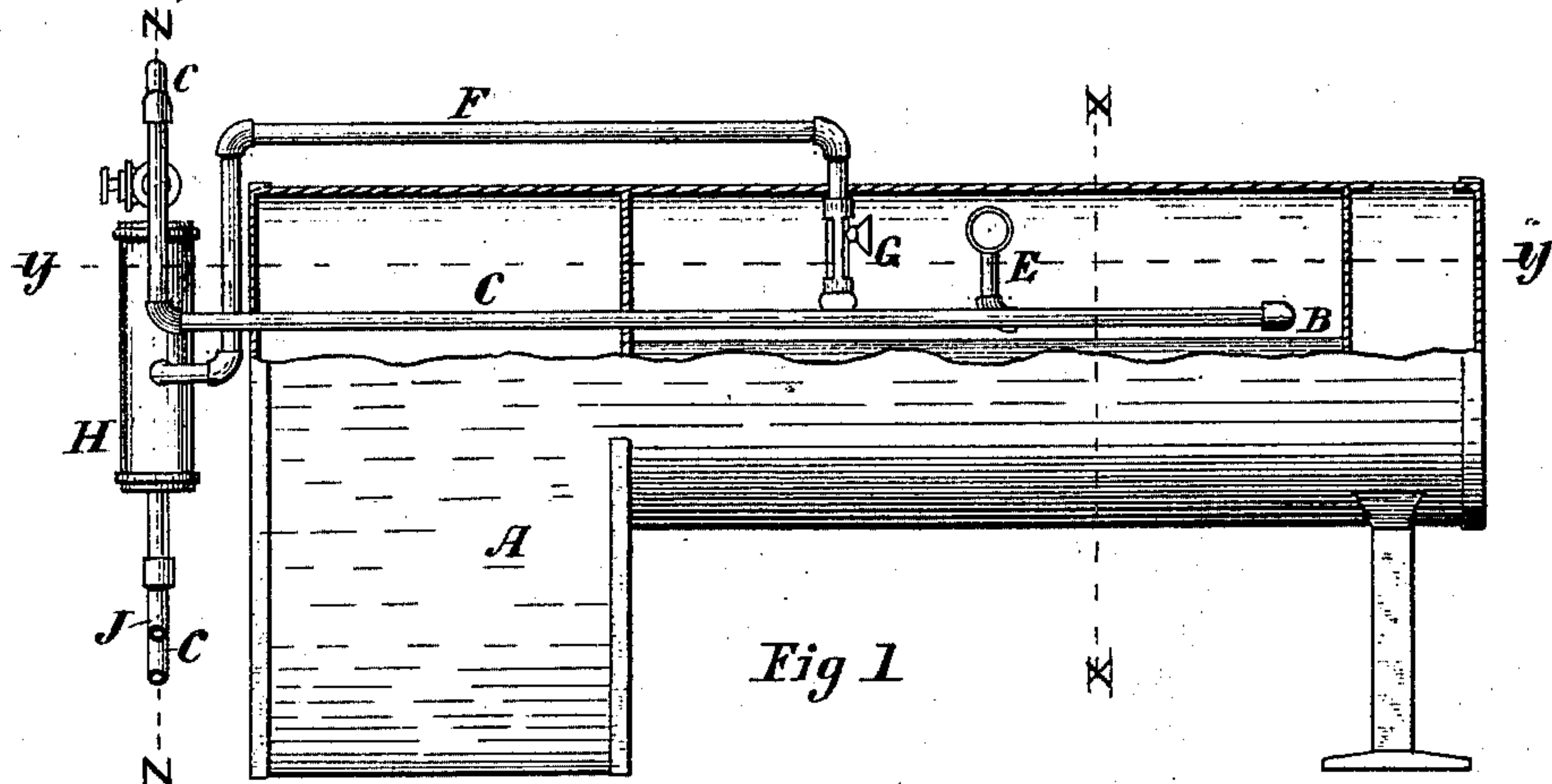


Fig 1

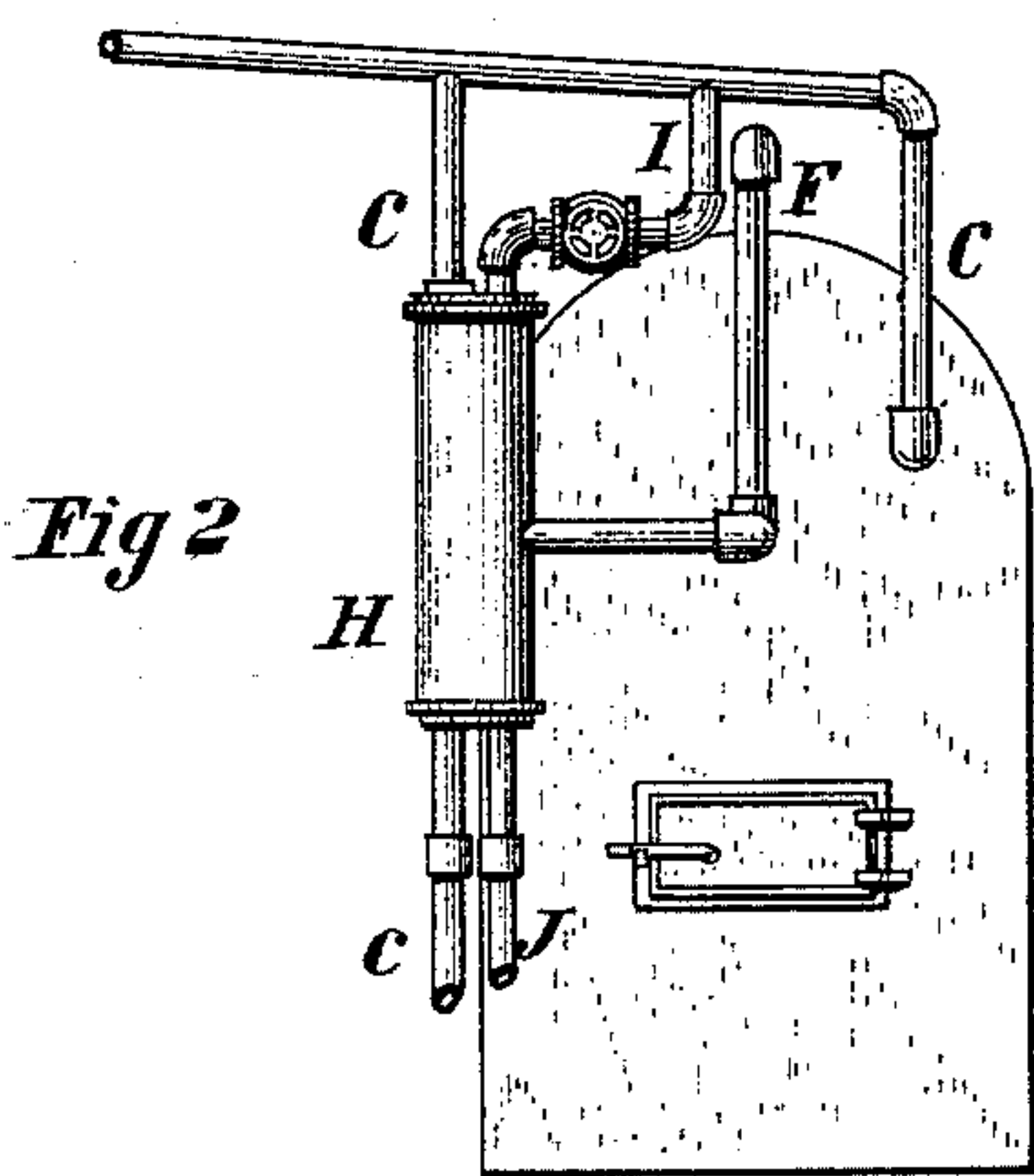


Fig 2

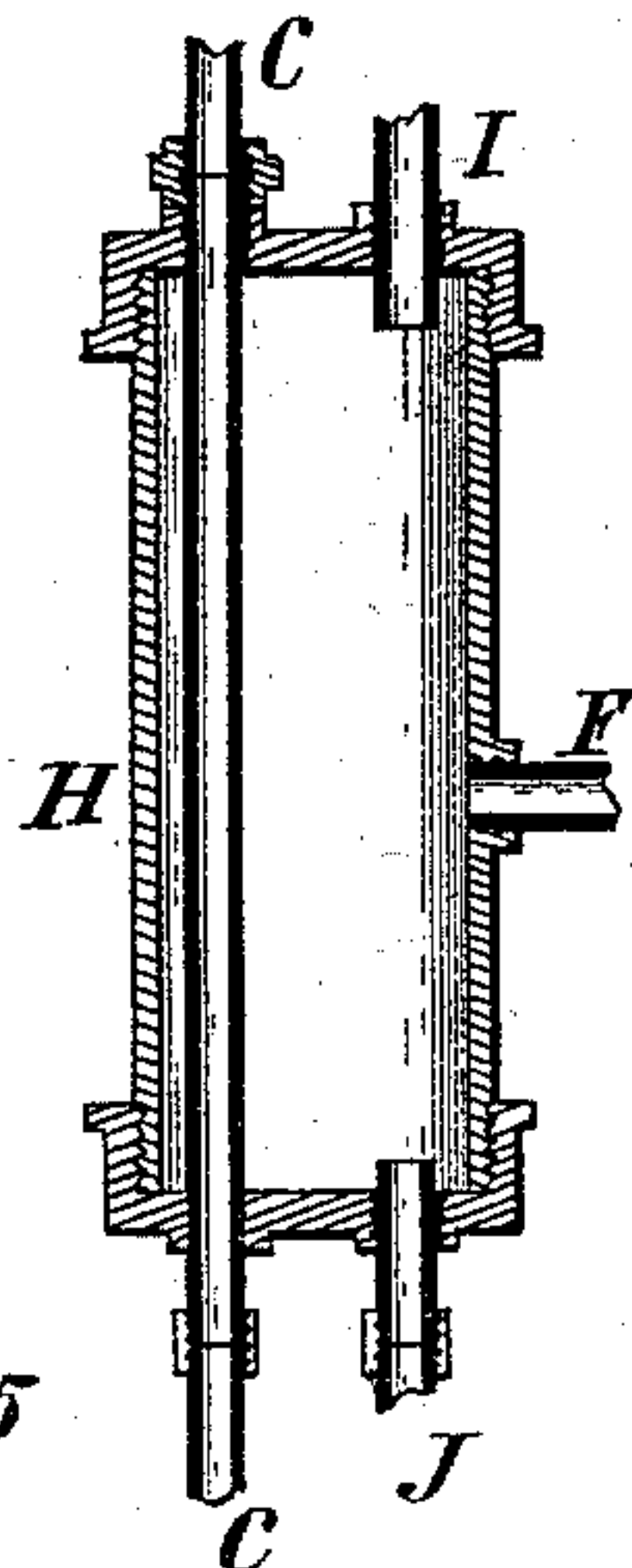


Fig 5

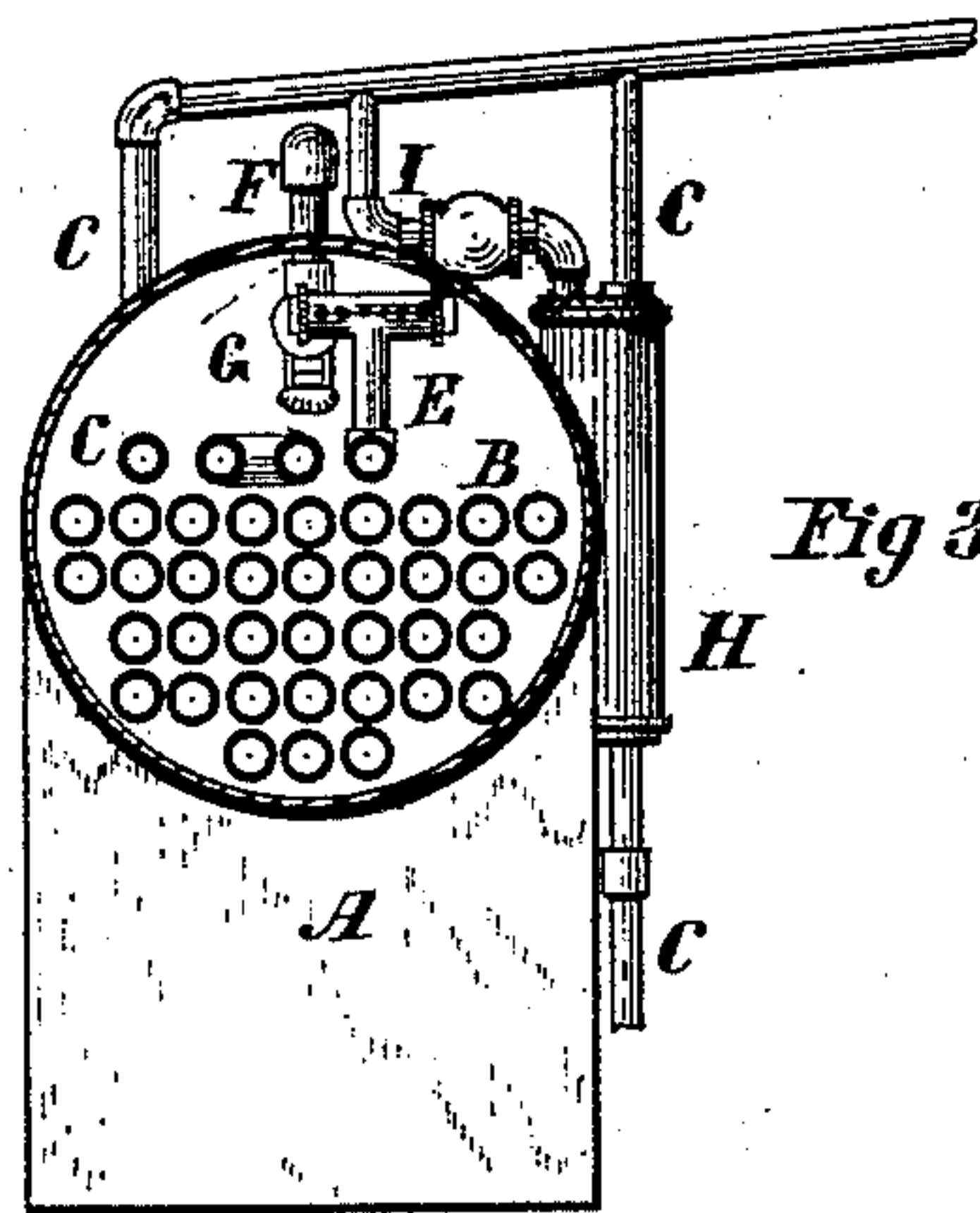


Fig 3

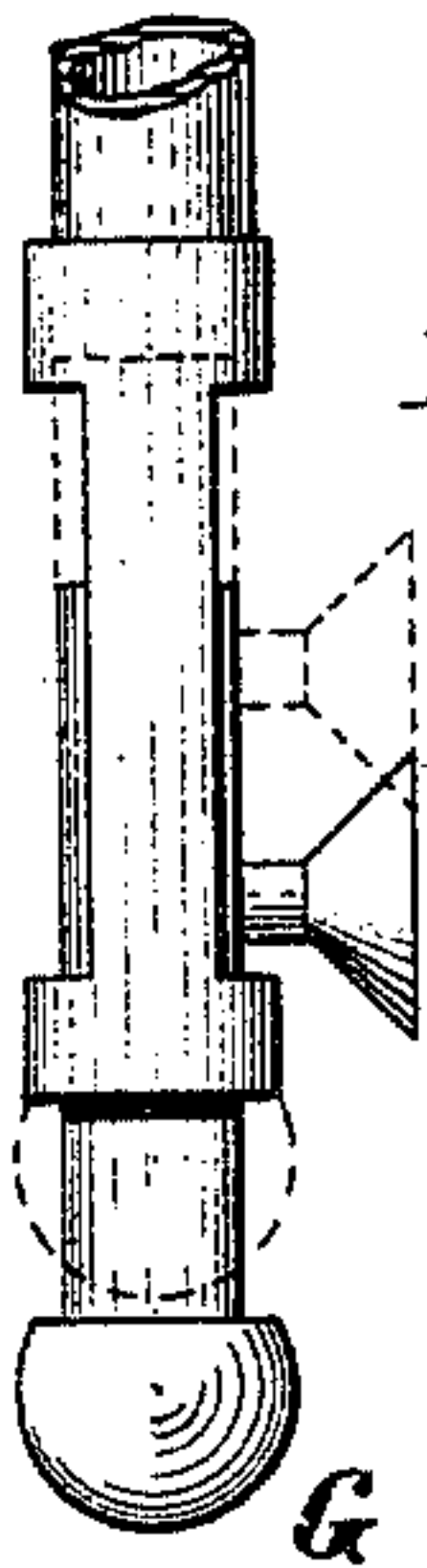


Fig 6

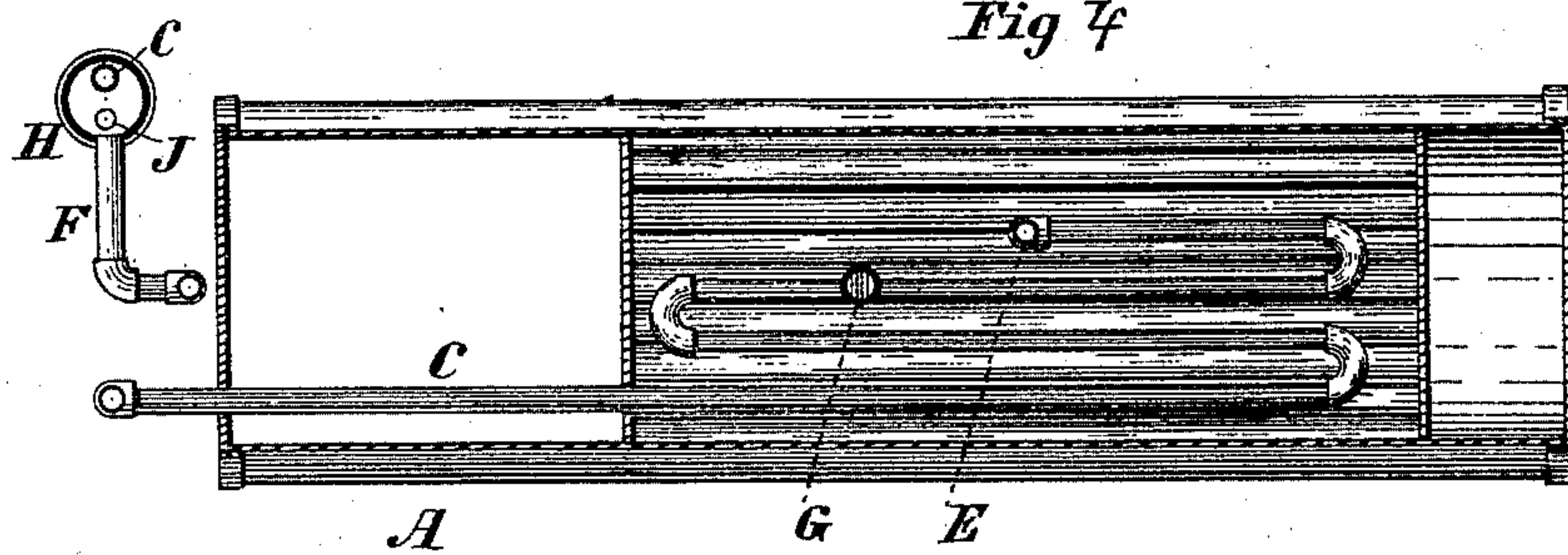


Fig 4

Witnesses

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UNITED STATES PATENT OFFICE.

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SURFACE-FEEDER FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 223,380, dated January 6, 1880.

Application filed April 18, 1879.

To all whom it may concern:

Be it known that I, CHARLES N. PETESCH, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful
5 Improvement in Surface-Feeders for Steam-Boilers, which is fully described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of my
10 boiler and its attachments, partly in section; Fig. 2, a front elevation of the same; Fig. 3, a transverse sectional view taken at the line x x , Fig. 1; Fig. 4, a longitudinal sectional view taken on the line y y , Fig. 1; Fig. 5, a vertical
15 sectional view of the heater and sediment-chamber; and Fig. 6, an enlarged detached view, showing the surface-float and end of the pipe through which the impurities pass.

The object of my invention is to feed the
20 boiler in such a manner as to keep it clean and prevent it becoming coated and foul, and also provide the boiler with a suitable device for removing all matter that is not convertible into steam, and which solidifies and coats
25 a boiler and causes it to burn out.

In the accompanying drawings, A represents any ordinary boiler, provided with the heating-flues B. C represents the feed-pipe, through which the water is fed into the boiler
30 by means of a pump or other feeding device. This feed-pipe passes through a heating drum or chamber, H, and is provided with the ordinary valve; but after passing into the boiler it is provided with a discharge-pipe, which
35 extends above the surface of the water into the steam-chamber. This discharge-pipe E is provided with a sprayer, so that the water is sprayed into the steam as it passes from the
40 feed-pipe. By discharging the water in this manner into the boiler the impurities are separated from the water and lodged upon the surface largely, and are carried off, as herein-
after more fully described, without being carried into the water or settling to the bottom
45 and lodging upon the inner surfaces of the boiler.

F is a pipe opening into the boiler, and G is a float, so attached to the inner end of the pipe F that as it is raised and lowered by
50 floating on the surface of the water it opens the pipe always just at the water-surface, so

that the scum that floats on the surface of the water passes into the pipe F and is carried over into the heater H.

The pipe F is provided with the ordinary
55 valve, which admits of the steam and water passing through it in only one direction. The water and steam can pass from the boiler into the heater, but not from the heater into the boiler.
60

I is a pipe leading from the heater H into the pipe C. It is also provided with a valve, which admits of the passage of steam or water through it only in one direction—to wit,
65 from the heater into the feed-pipe.

The water and steam that passes from the boiler through the pipe F into the heater H heats the water in the feed-pipe as it passes through the water, and the steam which passes out of the heater and through the pipe I also
70 serves to additionally heat the water that is being fed into the boiler.

J is a pipe attached to the bottom of the heater, through which its contents are removed. The sediment and other impurities
75 that are carried from the boiler into the heater remain there until they are removed, while the steam is constantly passing back into the boiler through the feed-pipe, as above described.
80

There is a constant circulation kept up from the boiler through the heater, and the heater being cooler and its contents in less agitation than the contents of the boiler, the impurities
85 of the water are carried into and deposited in the heater, and the boiler is kept clean and free from scales and other impurities.

By keeping the boiler clean and comparatively free from sediment I greatly diminish the danger from accident and the liability of
90 burning and in other ways injuring the boiler.

I also find that by spraying the water from the feed-pipe into the steam, as above described, impure water, that has a tendency to foam or produce suds in the boiler when admitted
95 into the boiler in the usual way, can be used without that trouble, and the impurities are carried off as above described, or directly in the steam.

Having thus fully described my invention,
100 what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the boiler A, the pipe F, open at one end in the boiler, so as to receive the water in the boiler, a cooling-chamber, H, coiled feed-pipe C, and a suitable return-pipe leading from the heater to the boiler, 5 all arranged substantially as specified.

2. The combination of the discharge-pipe E, provided with a perforated discharge, and arranged within the boiler, substantially as specified, the pipe F, and the heater H, with suitable return-pipes from the boiler, for the purpose of conducting away the impurities from 10 the boiler into the heater from the discharge-

pipe E without their being mingled or mixed with the water in the boiler, arranged substantially as specified. 15

3. The combination of the coiled feed-pipe, the heater H, and the pipes F and I, whereby the water in the feed-pipe is heated by the heater, and also by the steam passing from the 20 heater, all arranged substantially as shown and specified.

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Witnesses:

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