O. Ranney. Setting Boilers.

116630

PATENTED JUL 41871

Fig. 1.

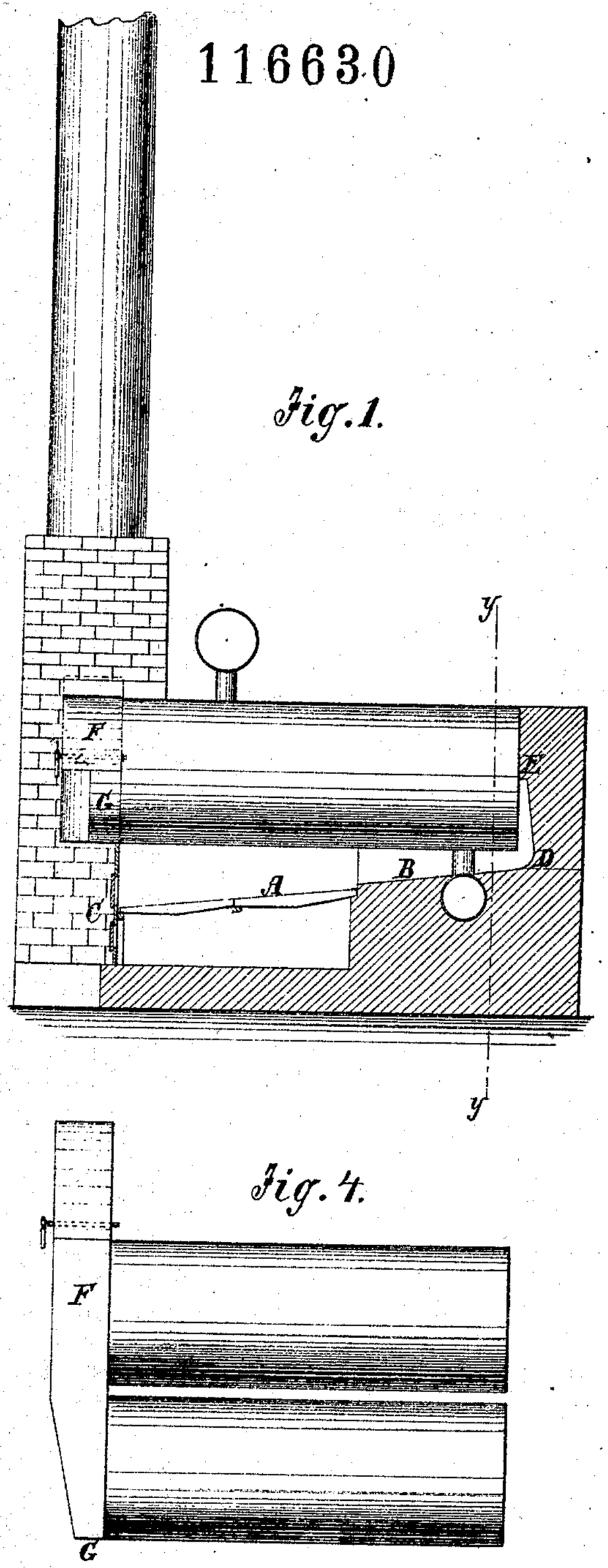

Fig. 2.

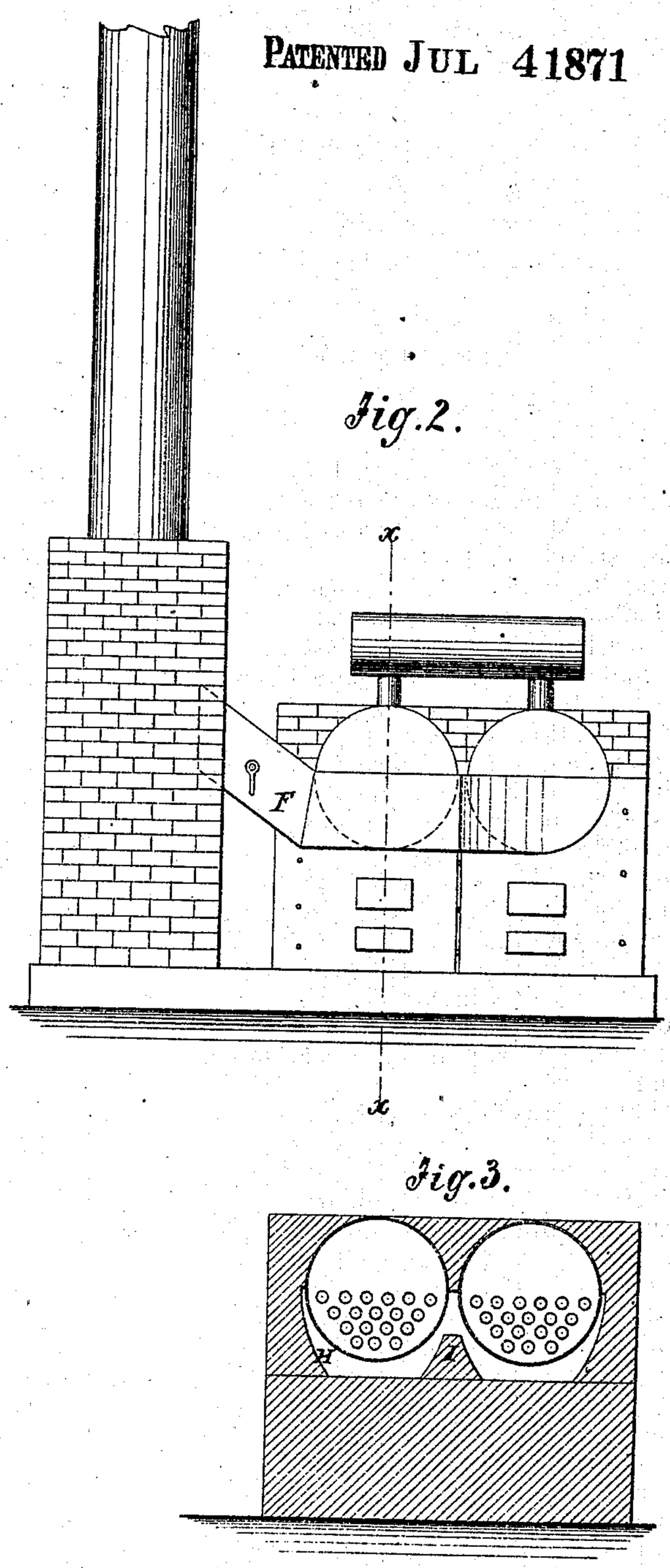

Fig. 4.

Fig. 3.

Witnesses:
A Beinneuendorf.
Wm. H. C. Smith.

Inventor:
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per Munn & Co
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116,630

UNITED STATES PATENT OFFICE.

ORRIN RANNEY, OF CORRY, PENNSYLVANIA.

IMPROVEMENT IN SETTING STEAM-BOILERS.

Specification forming part of Letters Patent No. 116,630, dated July 4, 1871.

To all whom it may concern:

Be it known that I, ORRIN RANNEY, of Corry, in the county of Erie and State of Pennsylvania, have invented a new and useful Improvement in Setting Steam-Boilers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in setting steam-boilers; the object being to facilitate the draught and the applicaion of heat to the boilers. The invention consists in graduating the arch and the breeching from the fire-door to the smoke-stack, in the manner hereinafter described, for improving the application of the heat and facilitating the draught.

Figure 1 is a longitudinal sectional elevation on the line *x x* of Fig. 2. Fig. 2 is a rear-end elevation. Fig. 3 is a section on the line *y y* of Fig. 1, and Fig. 4 is a plan of the boilers and the housing.

Similar letters of reference indicate corresponding parts.

I propose to arrange the grate A and the bottom B of the arch behind it on a gradual and uniform ascending incline from the mouth C to the rear D, and to incline the wall from D to E toward the boilers in the same manner; also, to graduate the capacity of the breeching F from the end G, beginning on the side of the most distant boiler from the smoke-stack discharging into it toward the smoke-stack, according to the volume discharging into it or the sum of the areas of the flues discharging into it, which arrangement, together with the smoke-stack made considerably greater than the area of the boiler-flues and the arch, has the effect of making the draught much more rapid from the fire through the arch and flues, and thereby very greatly increases the steam-generating capacity, also the capacity to burn wet fuel, such as green tan-bark and the like.

The ascending grade B and the oblique wall D E, also the graduated arrangement of the breeching, are also intended to avoid any dead-air spaces, which are objectionable on account of the accumulation of smoke therein, which discharges from time to time as any disturbance of the draught may arise, in gusts and the like, in a way to choke and obstruct the draught.

In connection with the above, and for still further carrying out the idea of constructing the most direct course for the product of combustion, and also the most perfect application of the heat to the boilers, I propose to arrange the side walls of the arch on the curved lines, represented at H, and provided with the raised wall I along the wall B, under the space between the boiler, to fill up the space which would otherwise be occupied by heat which would be in operation upon the boilers or would have but a limited effect thereon.

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

The fire-grate and the bottom wall behind the grate arranged on a regular ascending grade, the walls D E inclining toward the ends of the boiler, and the breeching graduated, as described, all in connection with a smoke-stack having greater capacity than the arch and the flues for creating a rapid draught through the arch and flues, all substantially as specified.

ORRIN RANNEY.

Witnesses:
C. D. HUTCHINS,
H. A. BAKER.