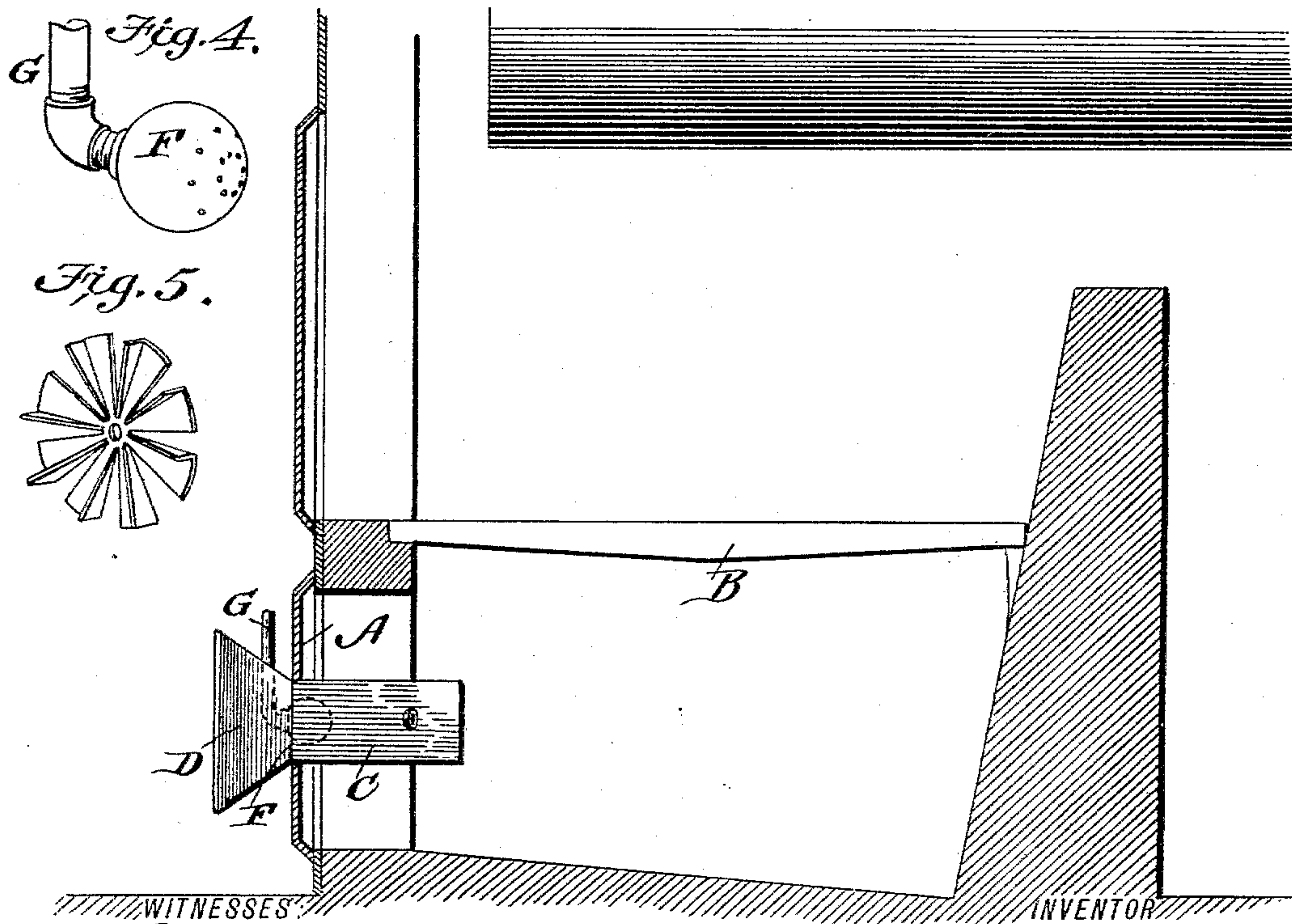
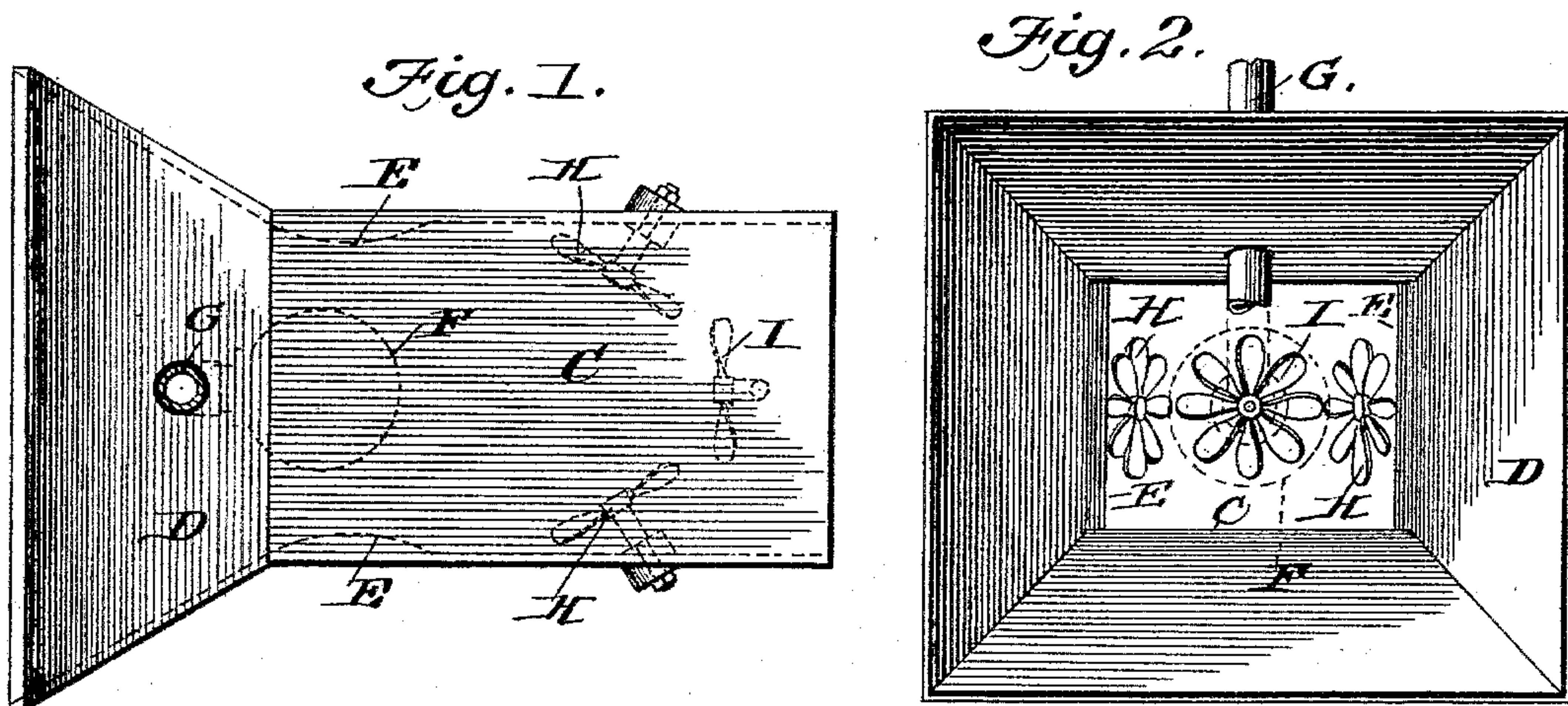


(No Model.)

J. O. MORRIS.
GENERATOR.

No. 596,903.

Patented Jan. 4, 1898.



WITNESSES
M. S. Blouelle
P. B. Turpin.

INVENTOR
John Oden Morris
BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN ODEN MORRIS, OF RICHMOND, VIRGINIA, ASSIGNOR OF ONE-HALF
TO JASPER L. ROWE, OF SAME PLACE.

GENERATOR.

SPECIFICATION forming part of Letters Patent No. 596,903, dated January 4, 1898.

Application filed June 1, 1897. Serial No. 638,971. (No model.)

To all whom it may concern:

Be it known that I, JOHN ODEN MORRIS, of Richmond, in the county of Henrico and State of Virginia, have invented a new and useful
5 Improvement in Generators, of which the following is a specification.

My invention is a generator for use in furnaces, and has for an object to provide a simple construction by which to supply mixed
10 steam and oxygen in such manner as to secure a better combustion of the fuel; and the invention consists in certain novel constructions, combinations, and arrangements of parts, as will be hereinafter described, and
15 pointed out in the claim.

In the drawings, Figure 1 is a top plan view of my generator. Fig. 2 is a front view thereof; and Fig. 3 is a side view of the generator, the ash-pit door and grate-bars being shown
20 in connection therewith.

The generator in use is arranged or works in the ash-pit door A in such manner as to supply the mixed oxygen and steam under the grate-bars B of the furnace, as best shown
25 in Fig. 3.

The generator may be permanently connected with the door A or may be removable, so it can be used at intervals or whenever desired.

30 The flue C may be of any desired shape and is provided at its outer end with the flared or funnel-shaped mouth D, in which an ample supply of air may be drawn. At such end the flue C is contracted by the inwardly-projecting side flanges or beads E and also by the
35 steam-jet nozzle F, supplied by steam-pipe G and preferably made of cast-iron. This nozzle is supplied with about sixteen one-sixteenth-of-an-inch holes directed toward the
40 inner rear end of the flue. In the flue C in rear of the nozzle I provide a mixer for steam and oxygen. This mixer is shown as comprising

the side wheels H and the central wheel I, all being arranged to be acted on and turned by the steam discharged by the steam-jet and to
45 effect a mixture with such steam of oxygen in such manner as to aid the combustion in the furnace.

The side wheels H are set at an angle and face slightly toward the steam-jet nozzle, while the wheel I stands in a line between the
50 side wheels and squarely in line with the nozzle. The two side wheels operate to draw the oxygen in and the middle wheel mixes it with the steam, and the steam and oxygen are supplied to the furnace in such manner as to
55 effect a practically perfect combustion, burning up the gases, &c., that would otherwise go out of the stack, and thus increasing the heat in the furnace and resulting in a great
60 saving of fuel, as will readily appear.

The use of the three wheels arranged and operating as described is of great importance in securing a proper supply of oxygen and the mixture thereof with the jetted steam.
65 The wheels are preferably made, as shown, in the form of bladed wind-wheels, so they will be properly turned by the steam and will, when so turned, draw in the oxygen and mix the same with the steam.
70

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

In a generator the combination of the flue, the steam-jet nozzle, the wheels arranged at
75 opposite sides of said flue and the central wheel arranged in line between said side wheels, the said wheels being arranged to be operated on by the steam discharged from the nozzle substantially as described.

JOHN ODEN MORRIS.

Witnesses:

GEORGE STERLING TALLEY,
JAMES AUBREY SYKES.