

# E. DAY

Steam Generator

117519

PATENTED AUG 1 1871

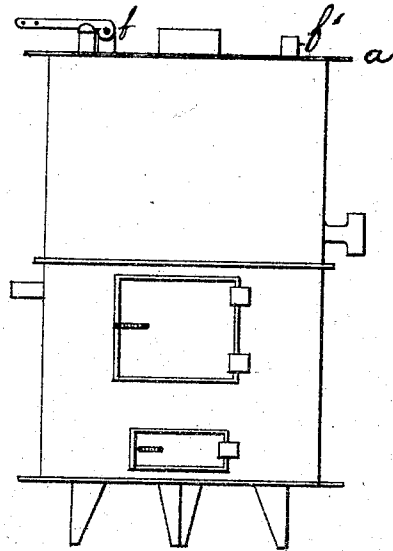


Fig. 1

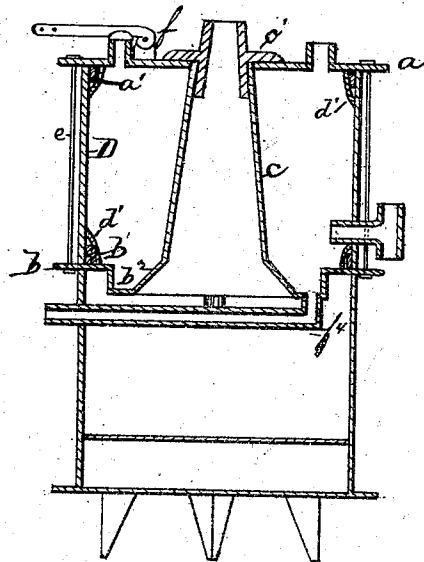


Fig. 2

Witnesses

W. B. Raymond  
L. J. Hayes.

Inventor

E. Day by  
H. W. Biadler, atty

# UNITED STATES PATENT OFFICE.

EDWIN DAY, OF ROCKFORD, ILLINOIS.

## IMPROVEMENT IN STEAM-GENERATORS.

Specification forming part of Letters Patent No. 117,519, dated August 1, 1871.

*To all whom it may concern:*

Be it known that I, EDWIN DAY, of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Generator; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

This invention has for its object the production of a cheap, simple, and effective generator; and consists in certain details of construction, as will be fully described hereinafter.

In the drawing, Figure 1 represents a front elevation, and Fig. 2 a central sectional elevation of my improved generator.

To enable others skilled in the art to make and use my invention, I will now proceed to describe fully its construction and operation.

This generator consists, mainly, of a cylindrical boiler having a central opening through which pass the products of combustion, the boiler being located vertically over a fire-chamber. The fire-chamber is preferably constructed of cylindrical form, with proportions adapted to the size of the generator. It is, of course, provided with suitable doors for feeding the fire, &c., and with a grate for sustaining the fuel.

The boiler is constructed as follows: *a* represents the top plate, consisting of a disk provided with a central opening, and also, if desired, with other openings for the pipes, &c., and having, further, a downwardly-projecting flange, *a'*, as shown, the whole being cast in a single piece. *b* represents the bottom plate, which is also provided with a central opening, and with an upwardly-projecting flange, *b'*. It is further provided, also, with a depressed chamber, *b''*, having an inclined inner face, *b'''*, as shown. *c* represents the inner shell of the boiler, which is cylindrical in form, but tapers inwardly from bottom to top, as shown. The connection between the shell *c* and the top plate is formed by means of a flange-collar, *c'*, which is bolted or riveted in place,

the joint having been properly provided with cement or packing. *D* represents the outer shell of the boiler, which is provided at each edge with an inwardly-inclined flange, *d'*. By means of this construction it is readily united to the flanges of the top and bottom plates, the latter flanges, when in place, resting between the flanges *D* and the shell, as shown. *ee* represent securing-rods, which connect together the top and bottom plates and bind the parts firmly together. *f* represents the safety-valve; *f'*, the steam-supply pipe; *f''*, a gauge and draw-off cock; and *f'''*, a pipe attached to the depressed chamber of the bottom plate in order to discharge water and sediment. The pipe may branch so as to connect with the depressed chamber at several points.

Some of the advantages of this construction are as follows: The generator is simple in construction, and consequently it can be cheaply made. The boiler is exposed to the direct action of the fire, and it also receives heat from the products of combustion as they pass off to the smoke-pipe. The generator as a whole is compact in form, simple in construction, and effective in operation.

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

1. The generator described, consisting of the top plate *a*, bottom plate *b*, inner shell *c*, and outer shell *D*, the parts being constructed substantially as described.

2. The outer shell *D* with its flanges *d'*, in combination with the top and bottom plates with flanges *a'* *b'*, as described.

3. The combination of the bottom plate, having its depressed chamber *b''*, with the tube *f'''*, as described.

This specification signed and witnessed 26th day of May, 1871.

EDWIN DAY.

Witnesses:

G. W. FORD,  
WARREN WOODRUFF.