(No Model.)

W. H. HALLOWELL.

STEAM GENERATING SYSTEM.

No. 540,590. Patented June 4, 1895.

Fig. 1

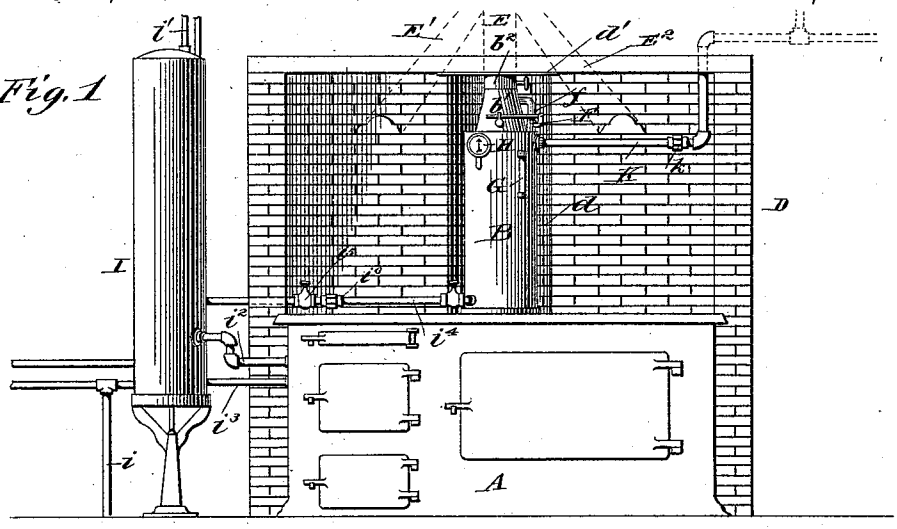


Fig. 2

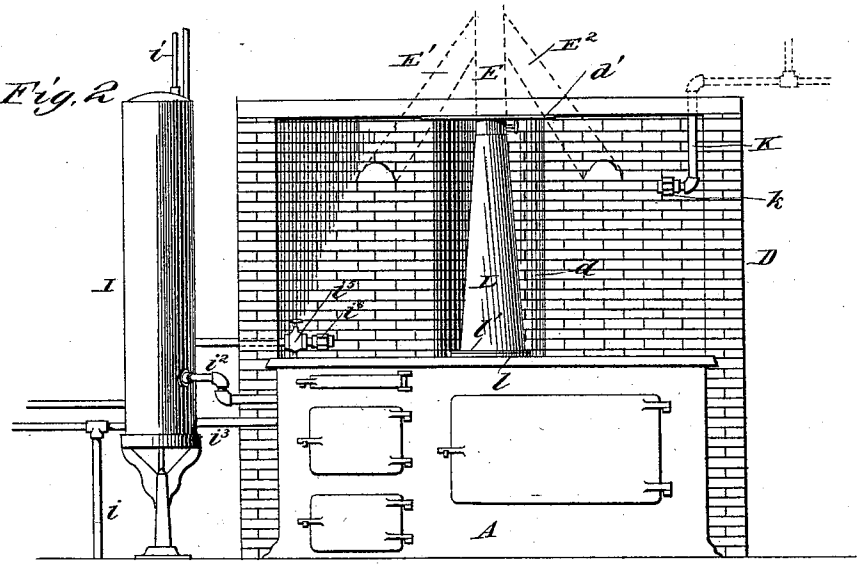


Fig. 3

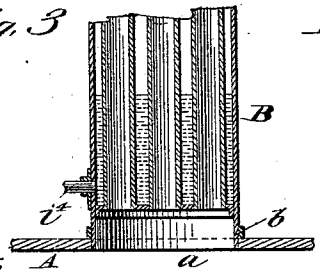
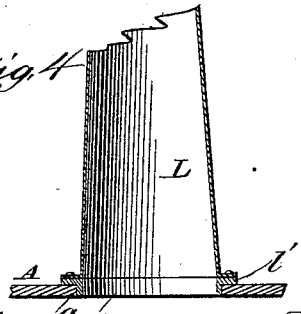


Fig. 4



Witnesses;
J. F. Coleman
Henry Smith.

Inventor
W. Henry Hallowell
by S. C. Fitzgerald
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM HENRY HALLOWELL, OF NORRISTOWN, PENNSYLVANIA.

STEAM-GENERATING SYSTEM.

SPECIFICATION forming part of Letters Patent No. 540,590, dated June 4, 1895.

Application filed December 29, 1894. Serial No. 533,274. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY HALLOWELL, a citizen of the United States, residing at Norristown, in the county of Montgomery, State of Pennsylvania, have invented certain new and useful Improvements in Steam-Generating Systems; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in steam generating systems.

The invention will first be described in connection with the accompanying drawings, and then particularly pointed out in the claims.

In the drawings, Figure 1 is a front view of a device embodying my invention with the steam-generator in place. Fig. 2 is a similar view showing the steam-generator removed and a smoke-pipe in place of it. Figs. 3 and 4 are detail views illustrating the construction which permits the interchanging of the steam-generator and smoke-pipe.

Referring to the drawings, A is a range constructed in any suitable or usual manner and provided with a smoke outlet *a* which is preferably circular and is adapted to receive the lower flanged end *b* of a tubular boiler B, whose tubes serve to conduct the smoke from the range A into a cone *b'* at the top of the boiler, from whence the smoke is led by a pipe b^2 into the chimney or flue, E.

The brick work D of the range setting is somewhat altered in my construction, a semi-circular niche *d* being left around the rear side of the boiler B, whereby the latter may be set back far enough to allow plenty of room on the range in front of it. The said niche *d* is covered by a cast iron plate *d'* having a pipe hole through which the pipe b^2 passes, and immediately above the said plate *d'* starts the chimney main or flue E, with which are connected the dust and oven flues E', E^2, as shown.

The boiler B is provided with a safety valve, F, a water gage, G, and a steam gage H, the safety valve F having an escape pipe *f* connected to the flues or chimney E.

I, is an ordinary hot water tank or kitchen boiler connected to a cold water pipe *i* and provided with a hot water exit *i'* in the usual manner. The boiler, I, is also connected to a water back or similar water heating device forming part of the range, by means of pipes i^2, i^3.

The kitchen boiler, I, and the steam generating boiler, B, are connected by a feed pipe i^4 having a valve i^5 and a coupling joint i^6, by means of which the pipe i^4 may be readily uncoupled and that part of it between the valve i^5 and the boiler B removed with the boiler.

The steam boiler B is connected by means of a pipe K, provided with a coupling *k*, to any suitable system of steam radiating apparatus for warming the house.

The operation of the apparatus thus far described is as follows: The boiler is filled with hot water from the kitchen boiler, by opening the valve i^5 in the feed pipe. When the boiler is filled to a suitable height, the said valve is closed. The heat from the range fire in passing through the tubes in the boiler B turns the hot water in said boiler into steam at a low pressure and this steam then flows out to the heating or other apparatus.

In summer time the boiler B is removed by uncoupling the pipes connected to it, and in place of the said boiler B, is put a smoke pipe L which is preferably conical and is provided at its lower end with an annular ring *l*, arranged to fit in the smoke outlet *a*, said ring *l* having an annular flange *l'* adapted to receive the lower end of the smoke pipe, L, which may be riveted to it, the upper end of the smoke pipe L being inserted through the opening in the plate *d'* and connecting with the chimney or main flue E. Thus the smoke pipe is interchangeable with the steam generating apparatus.

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

1. The combination with a range having a smoke outlet formed in its top, and a boiler connected with the water back of the range, of a removable steam cylinder or casing provided at its lower end with a depending flange adapted to fit snugly in the smoke outlet in the range top, detachable connections between said cylinder and the boiler, and a series of flues arranged in the cylinder and

adapted to conduct therethrough the products of combustion from the range, substantially as set forth.

2. The combination with a range having a smoke outlet in its top, and a hot water boiler connected with the water back of the range, of a removable steam cylinder or drum adapted to fit snugly, at its lower end, in the smoke outlet and provided with an annular flange that rests on the range top, the upper end being adapted to be connected with the chimney flue, an inlet pipe communicating at one end with the interior of said cylinder and provided at its other end with a detachable coupling by which it can be connected with a supply pipe leading from the boiler, a steam outlet pipe communicating with said steam cylinder, near its upper end, and adapted to be detachably connected with a system of distributing pipes, and a series of flues arranged in said cylinder to conduct the products of combustion from the range, through said cylinder, to the chimney, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM HENRY HALLOWELL.

Witnesses:
W. H. ORTLIP,
CHAS. E. FOULKE.