J. L. SUTTON.

Steam Heater.

No. 20,963. Patented July 20, 1858.

Fig. 2

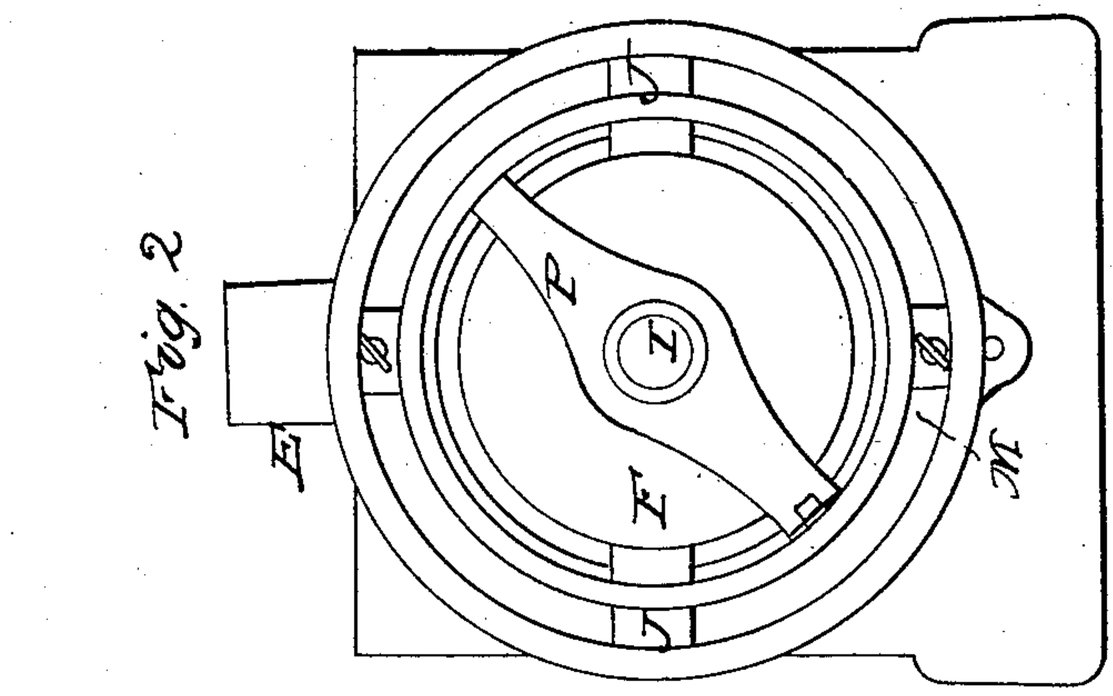
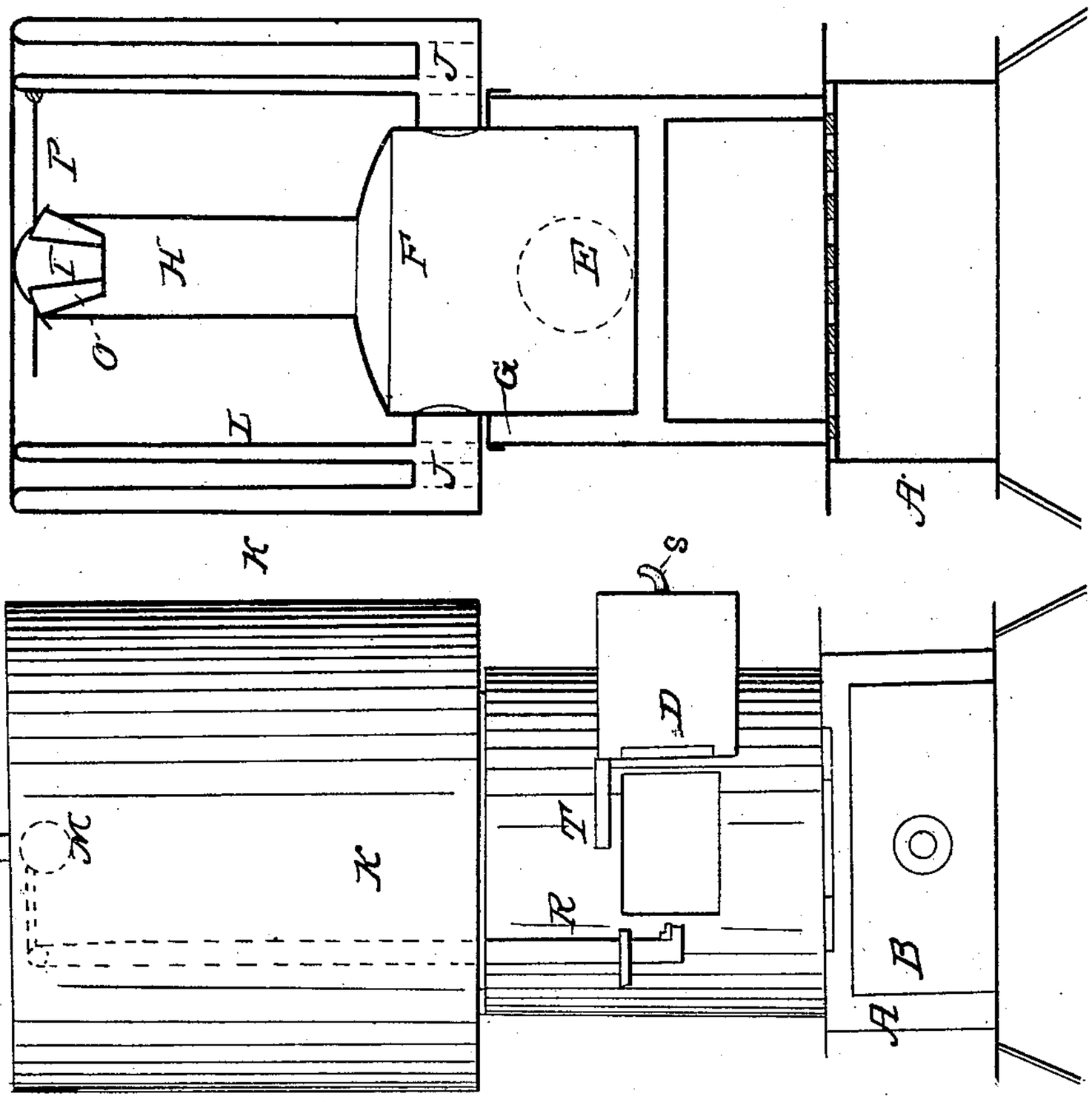


Fig. 1



N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

J. L. SUTTON, OF NORRISTOWN, PENNSYLVANIA.

STEAM-STOVE.

Specification forming part of Letters Patent No. 20,963, dated July 20, 1858; Reissued December 28, 1858, No. 640.

To all whom it may concern:

Be it known that I, J. L. SUTTON, of Norristown, in the county of Montgomery and State of Pennsylvania, have invented a new and useful Steam-Stove; and I do hereby declare that the same is described and represented in the following specification and drawings.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and the mode of using it referring to the drawings in which the same letters indicate like parts in each of the figures.

Figure 1, is a front elevation. Fig. 2, is a plan or top view. Fig. 3, is a sectional elevation on the line 3, 3, Fig. 2.

The nature of my invention consists in a new manufacture of steam stove, to wit, a stove or furnace and boiler with one, two or more circular concentric cylinders, around or above it, heated by the steam from said boiler, and arranged to receive the air heated by the stove or furnace as it ascends through and around them, and impart additional heat to it. Also, in arranging the steam cylinders above the stove or furnace so that they will be warmed by the heated air which rises from the stove when the fire is kindled and prepared to receive the steam by the time the water boils to make it.

In the accompanying drawing A, is the base of the stove supported by four legs, and containing a grate to support the fire, with an ash-drawer B, below it.

C, is the fire pot provided with a door D, for supplying the fuel. I prefer to make this fire pot double immediately around the fire, or to line it with soap stone or fire brick, as high as the bottom of the boiler or thereabout; so as to prevent the heat of the fire from escaping and heating the outside of the pot, so hot as to render the air unpleasant. To the upper part of the fire pot, I apply a pipe E, to conduct away the smoke.

The boiler F, is made a little less in diameter than the fire pot with a flange G, around it, about midway between the top and bottom, large enough to cover the top of the fire pot and support the boiler over the fire. The pipe H, is fastened to the top of the boiler and provided with a safety valve to let the steam escape when the pressure gets beyond or higher than the proper point. This safety valve has a plug I, in the center which may be removed to supply water to the boiler. The pipes J, J, are fastened to the opposite sides of the boiler near the top, to conduct the steam from the boiler into the cylinders K, and L, which are made of sheet or plate metal. Each of the cylinders K, and L, are made of two plates of metal set a sufficient distance apart to allow the steam to circulate freely between them, and joined at the top and bottom to prevent the steam from escaping. The inner cylinder L, is made so much larger than the boiler, as to allow ample space between them for the air to enter and ascend; and there is also ample space between the cylinders K, and L, for the air to ascend as it is heated.

The pipes J, J, serve the two fold purpose of conducting the steam from the boiler into the cylinders, and conducting the water formed in the cylinders, by the condensation of the steam back, to the boiler.

The cylinders K, and L, are connected near the top by the pipes M, M, which are provided with openings to let the air escape as the steam rises, and when the steam begins to escape the opening may be stopped by the plugs or screws N, N. I have found galvanized iron to answer a good purpose for the steam cylinders as it does not rust readily and the joinings may be soldered with facility.

The lever P, is hinged to the inside of the cylinder L, and rests on the safety valve O, and is connected to the rod R, which extends down to the latch S, of the door D, and is so arranged that when the steam opens the safety valve, it raises the lever, rod and latch, to release the door D, which is immediately thrown open, by the spring T, to let the cold air in, between the boiler and the fire, to lessen the production of steam. If the pipes which conduct the steam from the boiler, into the cylinders should be found insufficient to support them, they may be supported by standards from the base A, or brackets from the pot C.

The advantages of my steam stove over the ordinary stoves for heating purposes may be enumerated as follows. There is a very large surface heated to a moderate temperature, so that it yields a mild and uniform temperature, leaving the natural moisture in the air, instead of burning it, as it would do

if the air was heated by a stove surface at three or four hundred degrees. It requires far less fuel than a common stove, as I have warmed an apartment with my steam stove and three cents' worth of coal per day, which with the coal stoves in common use would have required 9 cents per day; besides warming at less expense the atmosphere is far more healthy than is heated by the coal stove. Intelligent people prefer warming their apartments by steam-heated surfaces, if they can afford to pay for them; but there are comparatively few that can afford to pay for steam heaters which cost from three to seven hundred dollars. But my steam stove, which can be made for ten dollars, will be within the means of most families. As the steam is condensed and the water returned to the boiler, it will require but little attention after the boiler is supplied with water and the fire kindled—that is, it will require very little more attention than a stove that has no steam work about it.

I believe I have described and represented my new manufacture of steam stove, so as to enable any person skilled in the art to make and use it, I will now state what I desire to secure by Letters Patent, to wit.

I claim—

The new manufacture of steam stove described, to wit, a stove or furnace and boiler with two or more concentric radiators, around or above said boiler and furnace, and arranged to receive the air heated by said furnace and boiler and impart additional heat to it as it ascends around and between them, substantially as described.

J. L. SUTTON.

Witnesses:
WM. ROSSITER,
SAML. C. ROBERTS.

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