BRIDGE & RUBY.

Heating Stove.

No. 54,102. Patented April 24, 1866.

FIG. 1.

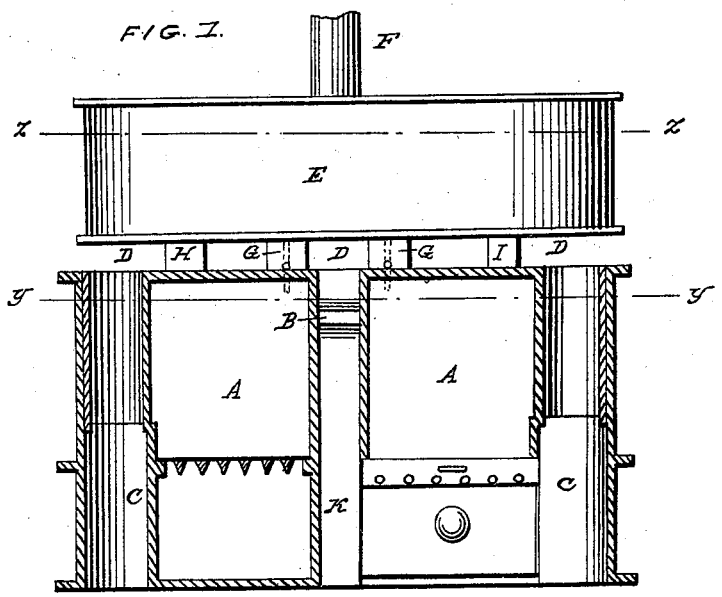


FIG. 2.

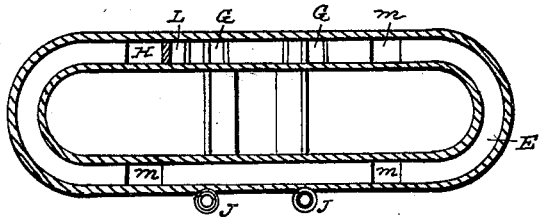
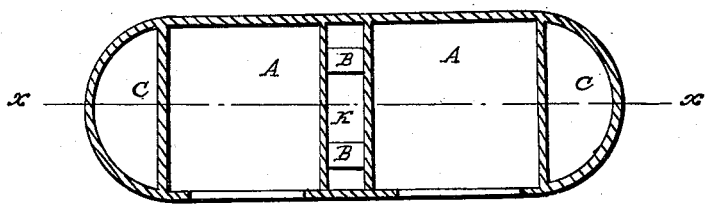


FIG. 3.



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UNITED STATES PATENT OFFICE.

LEWIS BRIDGE AND G. W. RUBY, OF YORK, PENNSYLVANIA.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **54,102**, dated April 24, 1866.

To all whom it may concern:

Be it known that we, LEWIS BRIDGE and G. W. RUBY, of York, in the county of York and State of Pennsylvania, have invented a new and useful Improvement in Stoves; and we 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 drawings, forming a part of this specification, in which—

Figure 1 is a vertical section, taken in the plane of the line *x* in Fig. 3, of a stove made according to our invention. Fig. 2 is a horizontal section through the drum on the line *z* of Fig. 1. Fig. 3 is a horizontal section through the fire-chambers on the line *y* of Fig. 1.

Similar letters of reference indicate like parts.

This improvement relates to stoves for heating purposes, and is adapted for all kinds of fuel. It embraces an air-passage extending from the outer surface of the base of the stove up through the middle of the stove, so as to divide the fire-space into two independent chambers, which are connected by flues that cross such central air-space; also, an air-tube extending from the under surface of the base of the stove upward through it, near each extremity of its longer axis; also, a horizontal air-space immediately above the fire-chambers, with which space the said air-passages communicate; also, a drum, in shape like a flattened ring, surmounting the fire-chambers and communicating with them by suitable flues, which extend through the horizontal air-space.

The letter A designates both fire-chambers. They are provided with grates, beneath which are ash-pits. They are separated by an air-channel, K, which extends from the bottom of the stove upward to a horizontal air-space that separates the lower part of the stove from its drum E. At each end of the stove are also vertical air-passages C C, which likewise communicate with air-space D. The fire-chambers are made to communicate with each other by means of flues B B, that cross the central air-channel, K.

The shape of the stove may be made to suit the taste and judgment of the maker; but in this example of our invention we have made it elliptical in form, the fire-chambers, however, being made square, by reason of the air-channels C C, whose sides toward the fire-chambers are straight.

The drum E is a flattened hollow ring, the space inclosed by which is open at top and bottom, and communicates with the horizontal air-space D. The double walls of the drum inclose a flue-space, E′, which is closed at the top and bottom, and which is provided with an exit-pipe, F. The fire-chambers A A may be placed in direct communication with the flue-space E′ by means of the pipes G G, which extend from the back part of the said chambers, through the air-space D, into said flue-space. These pipes are provided with dampers, which are controlled by rods J J, that reach across and through the front of the stove. When these pipes are closed the products of combustion pass through pipe H into said flue-space E, and make the circuit of the same, as indicated by the arrow, before they reach the exit-pipe F, being compelled to take that course by reason of the partition L, which divides the flue-space E′ between the pipe H and the exit-pipe F.

In using this stove, when fire is made in both fire-chambers the smoke and products of combustion from both will pass, supposing the pipes G G are closed, through pipe H into the flue-space E′, and in making its circuit will throw off the greater part of their heat before they reach the exit-pipe.

It will be observed that the fire-chambers are surrounded by air-spaces, or by the air in the apartment in which it is used, on every side, and therefore great economy results from its employment as a heater.

Whether one or both fire-chambers are used the course of the products of combustion is the same, and one or both fire-chambers may be used at pleasure, according to the exigency of the weather.

The drum is supported on the several pipes H G G and by pipes M, three in number, two being placed under the front part of the drum, their office being to enable one to clean the drum of soot. These pipes are controlled by sliding dampers, which are only withdrawn when soot is to be removed.

We do not claim the invention claimed in the patent of E. A. Hill, dated October 17, 1854, where the smoke of one fire is consumed by being directed over the incandescent fuel of the other fire. We do not provide for chang-

ing the course of the products of combustion from one fire to the other in alternation, but their course is always the same, except when each fire-chamber is operated with its own direct pipe G G; but

What we claim as new, and desire to secure by Letters Patent, is—

1. The arrangement above shown of the fire chambers A A, separated from each other by a central air-channel, K, through which pass connecting-flues B B, each chamber having direct escape-flues G G and a common flue, H, when the direct flues are closed, substantially as described.

2. The combination of the fire-chambers A A, the air-channels K C C, air-space D, and the drum E, containing a flue-space, E′, divided by partition L, substantially as described.

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Witnesses:
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