METCALF & SHOEMAKER.

Stovepipe.

No. 45,732. Patented Jan. 3, 1865.

Fig. 3.

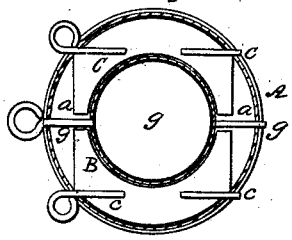


Fig. 1.

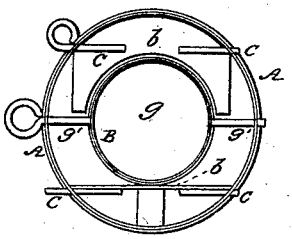


Fig. 4.

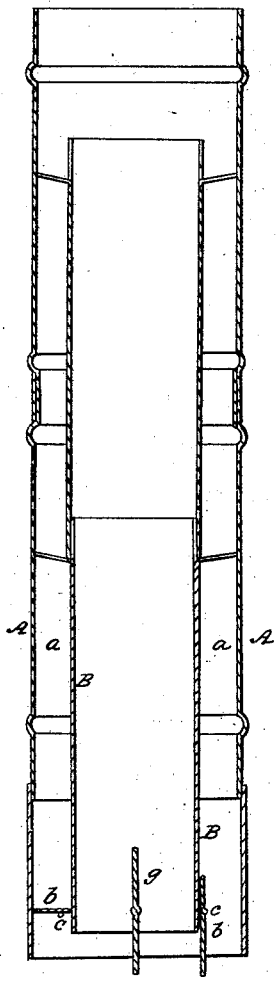
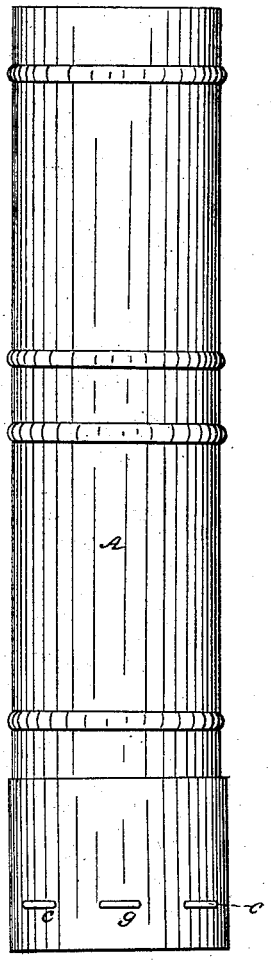


Fig. 2.



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UNITED STATES PATENT OFFICE.

DAVID H. METCALF AND HENRY J. SHOEMAKER, OF BATTLE CREEK, MICH.

IMPROVEMENT IN STOVE-PIPES.

Specification forming part of Letters Patent No. **45,732**, dated January 3, 1865.

To all whom it may concern:

Be it known that we, DAVID H. METCALF and HENRY J. SHOEMAKER, of Battle Creek, Calhoun county, State of Michigan, have invented a new and Improved Stove-Pipe; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view of our invention. Fig. 2 is a side elevation of a stove-pipe having our invention applied to it. Fig. 3 shows the three dampers closed. Fig. 4 is a diametrical section through Fig. 2.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to a novel improvement in stove-pipes, which have an interior pipe or cylinder arranged within them so as to form a central passage, and also an outer annular passage for the smoke to escape into the chimney. The passage of the smoke through these two pipes has hitherto been controlled by means of a circular disk-valve arranged within the central pipe, and two perforated dampers arranged over the upper end of the inner pipe, so as to close the outer passage and partially close the inner passage. The objections to this arrangement are that the products of combustion are conducted through only one section of the stove-pipe, and as two-thirds of the stoves which are now made are constructed with oval collars to receive over-pipes such an arrangement must be put in the second length of pipe, and as the perforated dampers in the arrangement above described must be located on top of its section of pipe they will be out of reach or very inconvenient of access. The object of our invention is to obviate these and other serious objections to such an arrangement of dampers by so constructing and pivoting the dampers for the outer passage that these dampers can be applied within this passage at any desired point and made to retain the position in which they are set, whether open or shut, as will be hereinafter described.

To enable others skilled in the art to make and use our invention, we will describe its construction and operation.

In the accompanying drawings, A represents a short section of a stove-pipe, within which is suitably secured a pipe, B, which is of a considerable less diameter than the pipe A, so as to leave an annular space, *a*, between it and this latter pipe. These pipes are adapted for receiving on their ends other sections corresponding in diameter, the connections being made by the ordinary sleeve joints, as shown in Fig. 2. It will be seen that the interior pipe, B, is also fitted into the interior pipe of the upper section, and in this manner the continuity is not interrupted and the interior sections of pipe effectually prevent the smoke from escaping into the exterior passage, and vice versa.

Our invention consists in so constructing dampers for the annular passage *a* that they can be located at any desired point in this passage, so that they can be conveniently operated. To effect this object two dampers, *b b*, are employed, arranged in the same plane and shaped so as to work freely within the annular space *a*, which they are intended to partially close. In order to pivot these dampers so that they can be opened or set in vertical planes, and remain in these positions, the pivot-rods *c c*, which are the axes of motion of these dampers, must be applied to them so that the weight of one side of each damper will counteract or balance that of the opposide side thereof. Thus constructed the slight friction on the damper-rods at the points where these rods pass through the pipe A will retain the dampers either in a horizontal or a vertical plane.

Within the central pipe, B, a circular damper, *g*, is applied, as shown in Figs. 1, 3, and 4, the pivot-rod *g'* of which is applied to it upon the principle described for the segmental dampers *b b*, so that it will remain in the position desired—*i. e.*, either open or closed.

By the arrangement of dampers above-described within the two pipes A B, the smoke can be conducted to the chimney through the central pipe, B, by closing the passage *a* and opening this pipe B, or if desirable, the smoke can all be conducted through the annular passage *a* by closing the damper *g* and opening the dampers *b b*. When the central passage, B, is open and the annular passage closed, all the smoke and heat will pass off and very little will be radiated from the outer pipe, A,

into the room, but if the heat from the escaping products of combustion is desired, the central damper is closed and all the smoke is conducted off through the passage *a*.

It is important that the dampers *b b* should fully open when a communication is to be made through the passage *a*, and in order to effect this when these dampers are arranged between the two pipes A B the corners or angles of these dampers are cut off, so that when they are completely open the ends or vertical edges will touch the outer pipe, A, and the curved sides of the dampers will touch the inner pipe, as shown in Fig. 1. Thus it will be seen that the two pipes are made to serve as supports for the dampers *b b* to assist in keeping them open.

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

1. Adapting balanced dampers *b b* to operate practically, when arranged at any desired point within the space formed by the two pipes A B, substantially as described.

2. So constructing and arranging the dampers *b b* within a space formed by the two pipes A B that when these dampers are fully open they will be supported in this condition by the two pipes A B, substantially as described.

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