

John H Goodfellow.

Imp^d Ash Box and Auxiliary Air Chamber.

N^o 121,506

Patented Dec. 5, 1871.

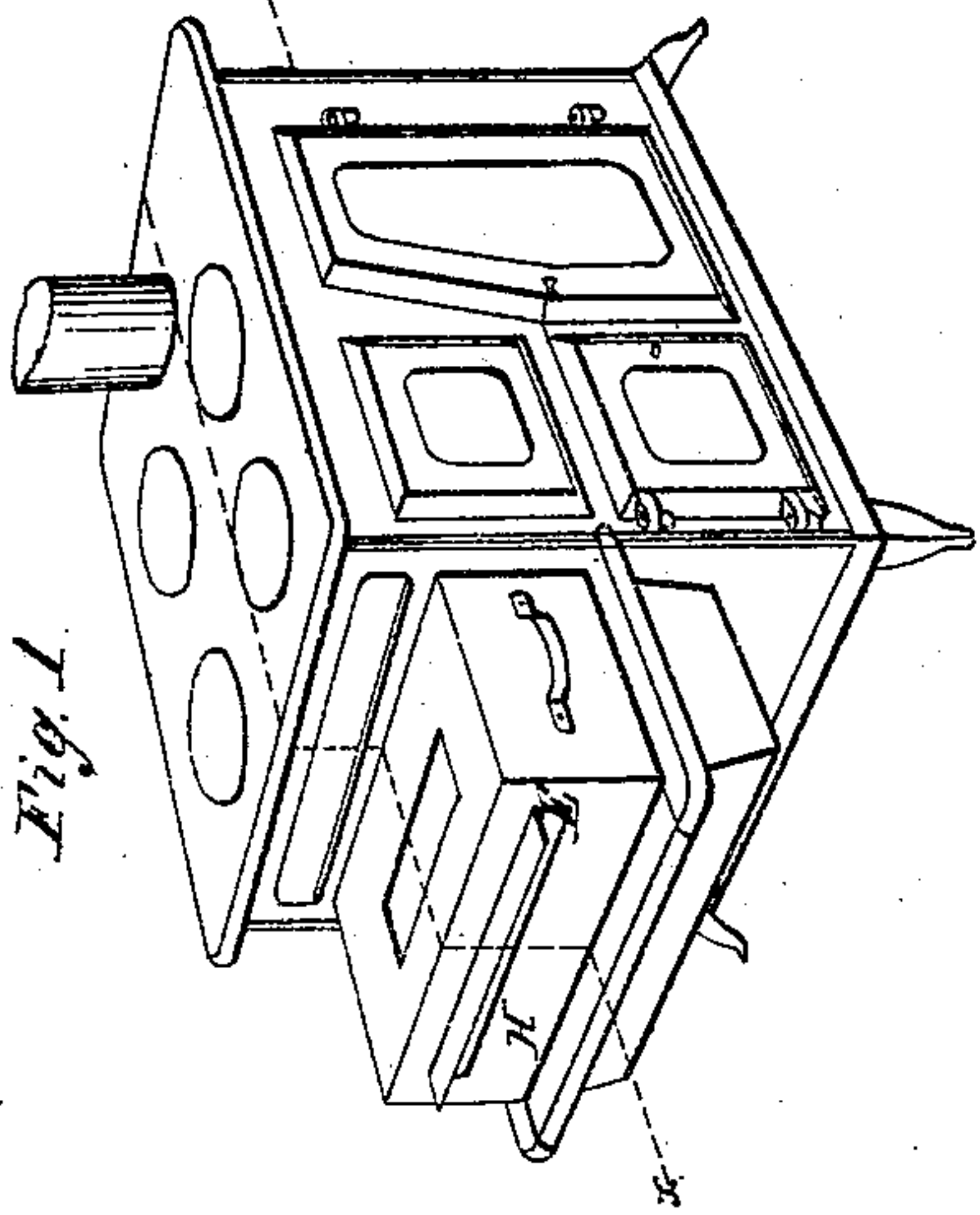


Fig. 1.

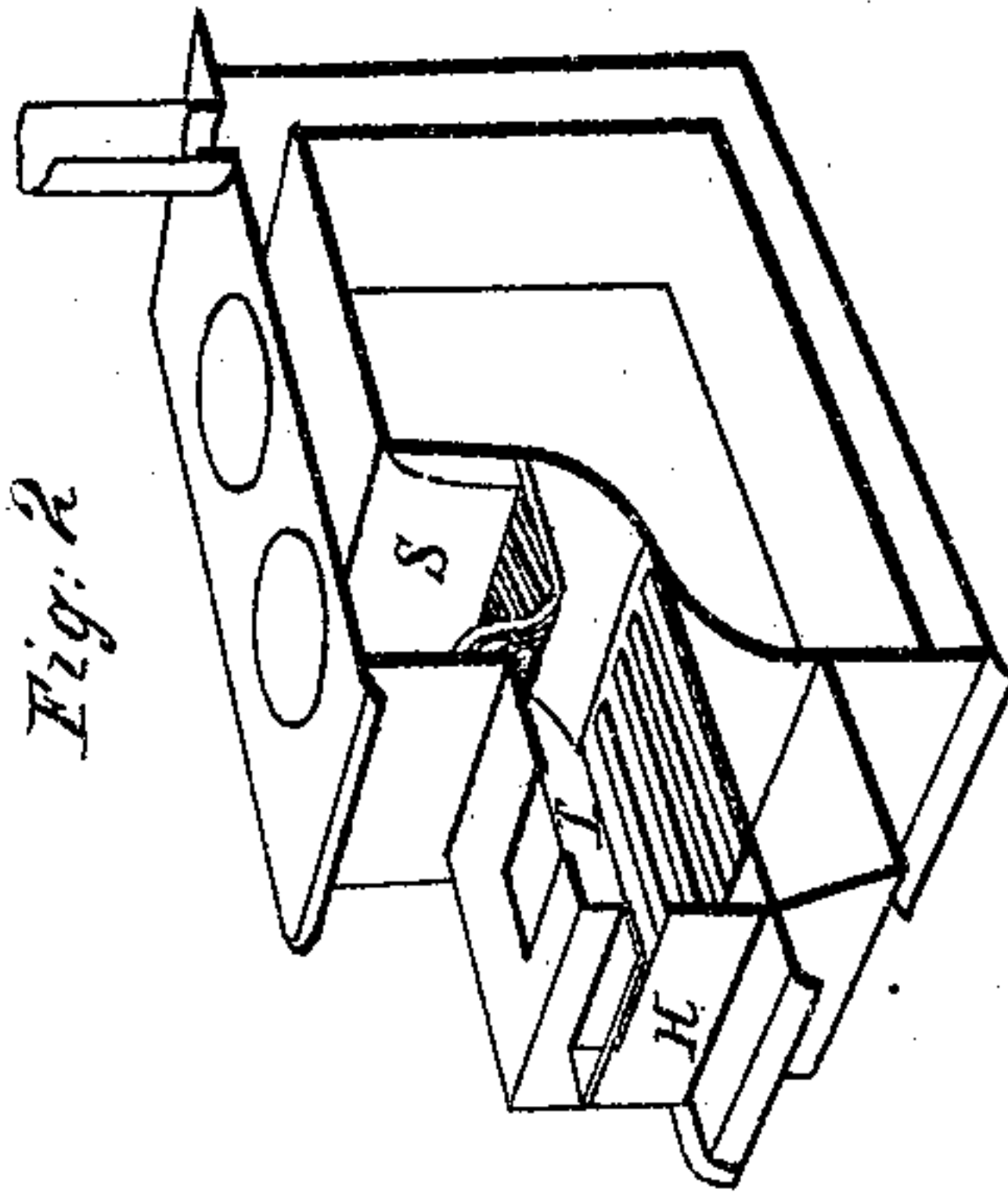


Fig. 2.

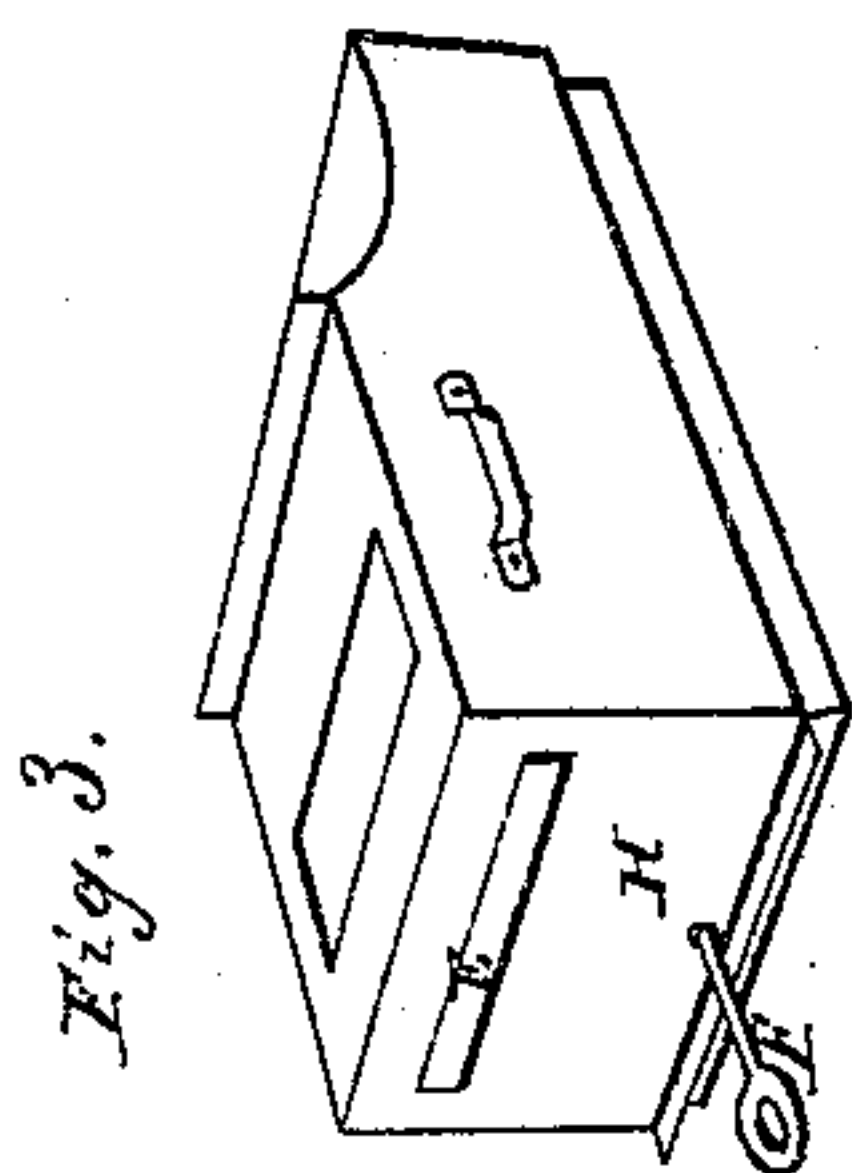


Fig. 3.

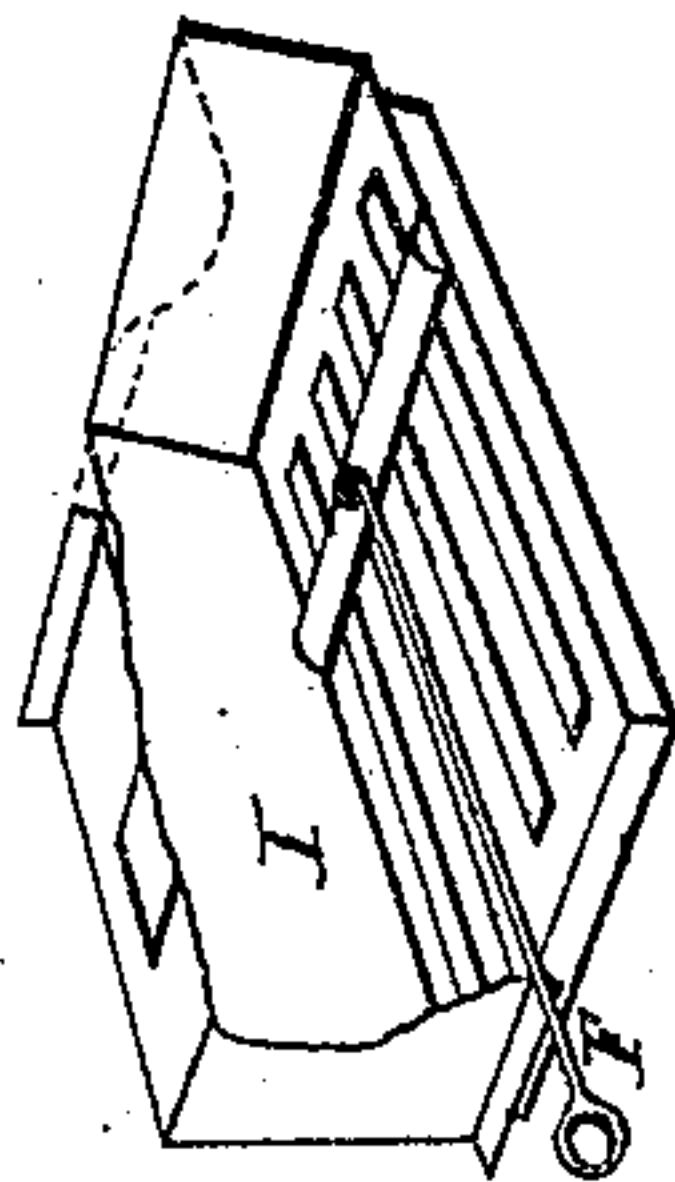


Fig. 4.

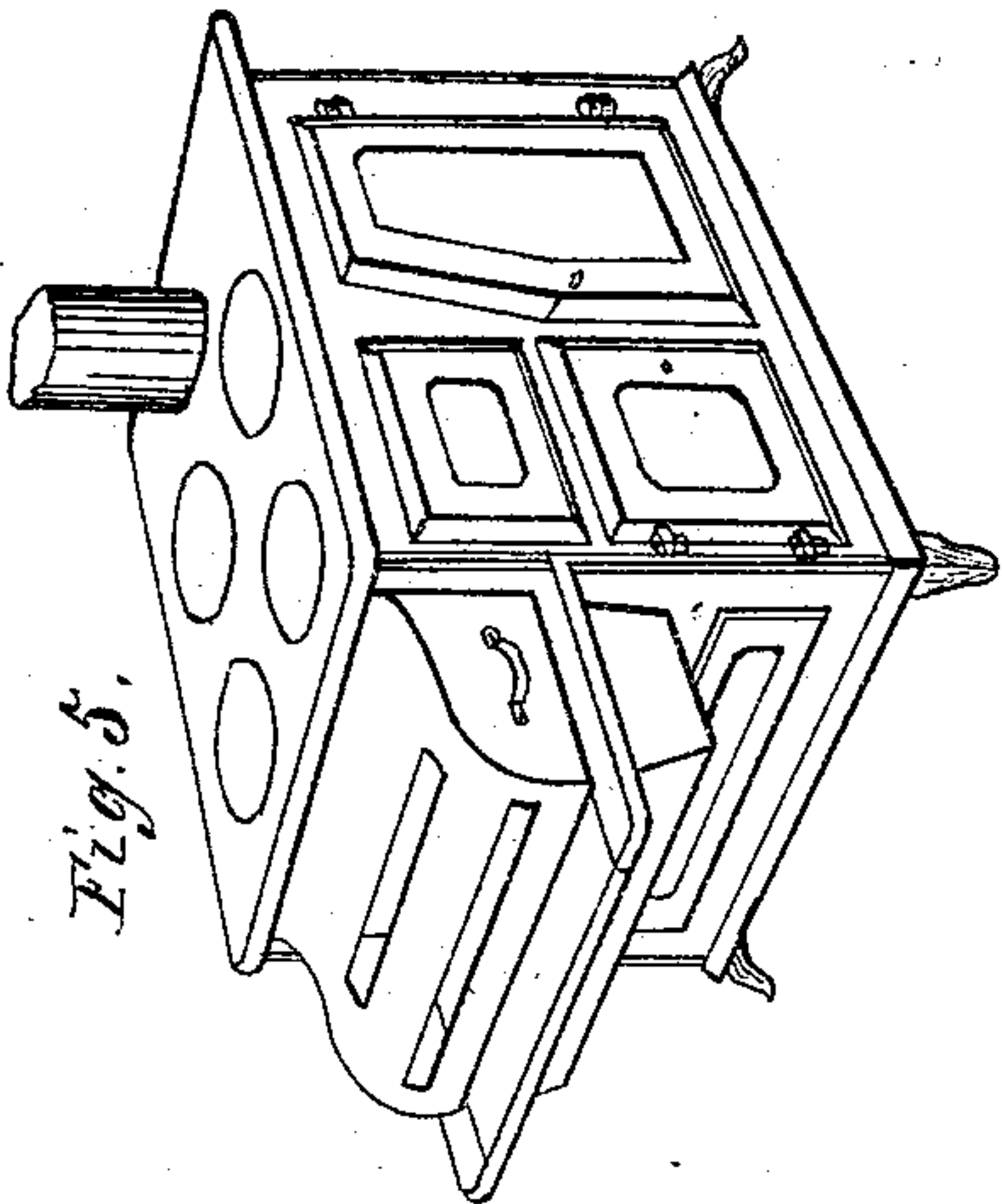


Fig. 5.

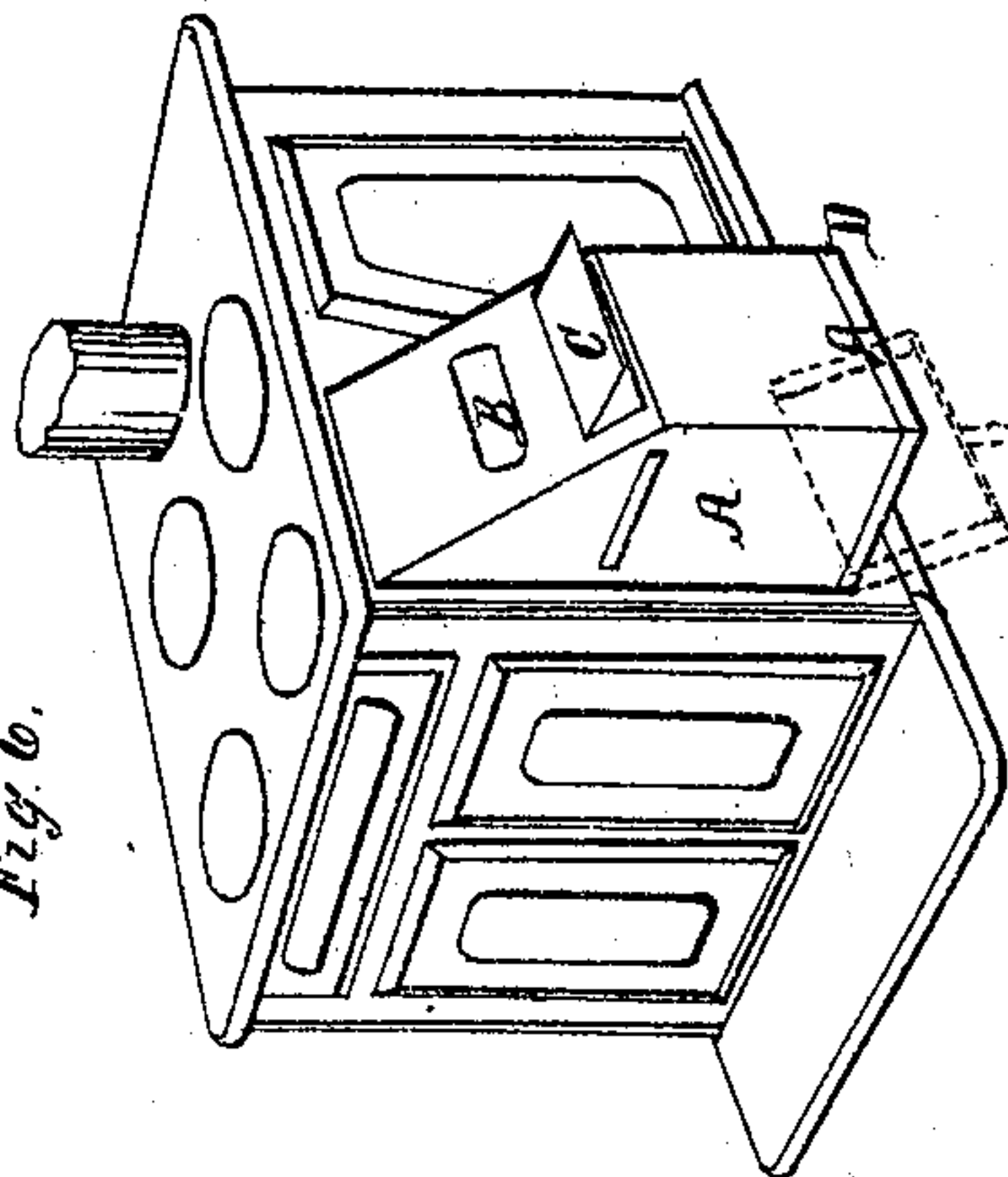


Fig. 6.

Witnesses,

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UNITED STATES PATENT OFFICE.

JOHN H. GOODFELLOW, OF TROY, NEW YORK, ASSIGNOR TO SWETT, QUIMBY & PERRY, OF SAME PLACE.

IMPROVEMENT IN AUXILIARY AIR-CHAMBERS FOR STOVES.

Specification forming part of Letters Patent No. 121,506, dated December 5, 1871.

To all whom it may concern:

Be it known that I, JOHN H. GOODFELLOW, of the city of Troy, in the county of Rensselaer and State of New York, have invented a new and Improved Ash-Box and Auxiliary Air-Chamber; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings which form and make a part of this my specification.

Like letters represent and refer to like or corresponding parts.

Figure 1 is a perspective view of a cooking-stove having attached to the front thereof my improved auxiliary air-chamber, more fully hereinafter described and set forth. Fig. 2 is a longitudinal section on the line $x x$, Fig. 1. Fig. 3 is a perspective view of my improved ash-box and auxiliary air-chamber detached from the stove, and Fig. 4 is a sectional view of the same, showing the grate and raker therein, more fully hereinafter described. Fig. 5 shows another form of my said auxiliary air-chamber, but substantially the same as that shown at Fig. 1.

The nature of my said invention and improvements consist in the construction of an ash-receiving box provided with a hinged bottom, as seen at Fig. 6 of accompanying drawings, for emptying it of its contents, and a bonnet or hinged door at its top, which has a suitable opening for permitting the working of the scraper when the bonnet is closed, said bonnet or door preventing the escape of the ash-dust into the room. It also consists of an oblong rectangular or other-shaped cap or cover, open on the bottom and side presented to the fire-grate of a cooking-stove, substantially in the manner and for the purposes herein described and set forth.

To enable others skilled in the art to which my invention relates to make and use the same, I will here proceed to describe the construction and operation thereof, which is as follows:

A designates the body of the ash-box, and this may be of any suitable shape, and is provided with an inclined or other-shaped roof. In the top of said box A is set a window, B, Fig. 6, of glass or isinglass, through which the operator can inspect his work. The top of one side of the box (that where the roof reaches the highest point) is left open, which permits it to be placed close up against the stove, so that the ashes may be

drawn into it without being scattered upon the floor. An opening is made in the roof at the lowest part of its slope, and over this there is fitted a door, *c*, Fig. 6, which may be raised or lowered, as desired. The scraper or poker is inserted through this door *c* and the ashes raked into the box A by means thereof. D is the bottom of the device, and is a hinged door, which can be opened for emptying the box of its contents.

It will be noticed that the ash-box is almost entirely closed when in use so that no ash-dust can escape. The device is handy and convenient and can be sold very cheaply.

Another part of my said invention, as illustrated by the accompanying drawings, consists of an oblong, rectangular, or other-shaped cap or cover, open on the bottom and side presented to the fire-grate. The front or outer side has a slot, E, Figs. 1 and 3, of convenient length, through which the draught is admitted to supply the fire. This slot is also used for the admission of the raker F, Figs. 3 and 4, for the purpose of cleaning the grate of ashes, &c.; or, if desired, the raker F may pass through said box by means of another opening, as seen at Figs. 3 and 4. The cover or chamber H when applied to a stove or heater, as the case may be, is so fitted as to preclude the admission of any draught except through the heated chamber I, Fig. 2.

By this means a large air-chamber or space is made through which the air must pass before it reaches the fire; during such passage it becomes highly heated and rarefied, thereby securing a diminished consumption of fuel, and also furnishing a largely-increased radiating-surface. Experiment has further demonstrated that, when this chamber is applied as above, a much higher temperature of the lower stratum of the atmosphere in the room is obtained, thereby securing a more equable temperature with a small amount of fuel through all parts of the room.

Among the other advantages secured by this device are, first, a more perfect consumption of the gases and vapors generated by combustion, actual trial having proved that, when communication with the chimney or exit-pipe is entirely cut off, no escape of any noxious gases is observable, thereby showing an almost perfect consumption of the fuel and gases; second, when applied to cooking-stoves of ordinary pattern the plate covering the hearth, and also a part of the front

of the stove, may be dispensed with, thus obtaining a much larger radiating-surface on the bottom of the stove, by means of which the temperature of the lower part of the room is rendered more uniform.

This device may be cast with stoves and heaters in the same manner as reservoirs or other external appendages may be attached. If cast in a separate piece or pieces it may be attached to the grate or ash-pit chamber by means of bolts passing perpendicularly through the chamber I and hearth-plate and secured in the ordinary manner; or the patterns for the stove, range, or heater may be so constructed as to form an internal chamber, exposed to the heat generated in the fire-box, so that no draught can reach the fuel except by first passing through this chamber. It may be constructed either on the sides of the fire-box, admitting the draught at one end of the chamber, and during its passage through the same rarefying it and passing it into the grate at the opposite end, or by constructing said chamber immediately under the grate or fire-box, so that the draught cannot reach the fire until after having passed through this chamber. The construction and application of this device and principle must, necessarily, be as various as there are different kinds of stoves and heaters used.

The form and application of this device, as shown by the drawings, are but two of many involving the same principles. By modifications in form and shape this invention may be adapted to all classes of heaters, furnaces, and boilers where it is deemed advisable to supply the fire with a heated draught or when the floating dust or ashes are a nuisance incident to the agitation of cleaning of the grate.

Having thus described the nature, construc-

tion, and operation of my said invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A portable ash-receiving box, A, provided with a hinged bottom, D, and door c, arranged and combined substantially as herein described and set forth.

2. Providing an ash-receiving box such as described with a window, B, for permitting the operator to inspect his work without incurring the liability of ash-dust getting into the room, substantially as herein described and set forth.

3. The shield H, or any equivalent therefor, for containing a horizontal opening or slot, E, at or near the top or upper edge thereof, constructed and applied or used in the manner and for the purpose substantially as herein described and set forth.

4. The employment of the auxiliary air-chamber I, constructed, arranged, and operated, in combination with the fire-grate P and fire-chamber or chamber of combustion S, in the manner substantially as hereinbefore described and set forth.

5. The arrangement and combination of the opening or elongated slot E, or any equivalent thereof, with the auxiliary air-chamber I, by means of which atmospheric air is admitted to the fire in the combustion-chamber S so as to promote and facilitate combustion and economy in the use of fuel, substantially as hereinbefore described and set forth.

In testimony whereof I have hereunto set my hand this 23d day of February, A. D. 1869.

JOHN H. GOODFELLOW.

Witnesses:

C. D. KELLUM,
N. E. HAGAN.