(No Model.)

J. W. & W. W. WILSON.

AIR TIGHT HEATING STOVE.

No. 605,037. Patented May 31, 1898.

Fig. 1.

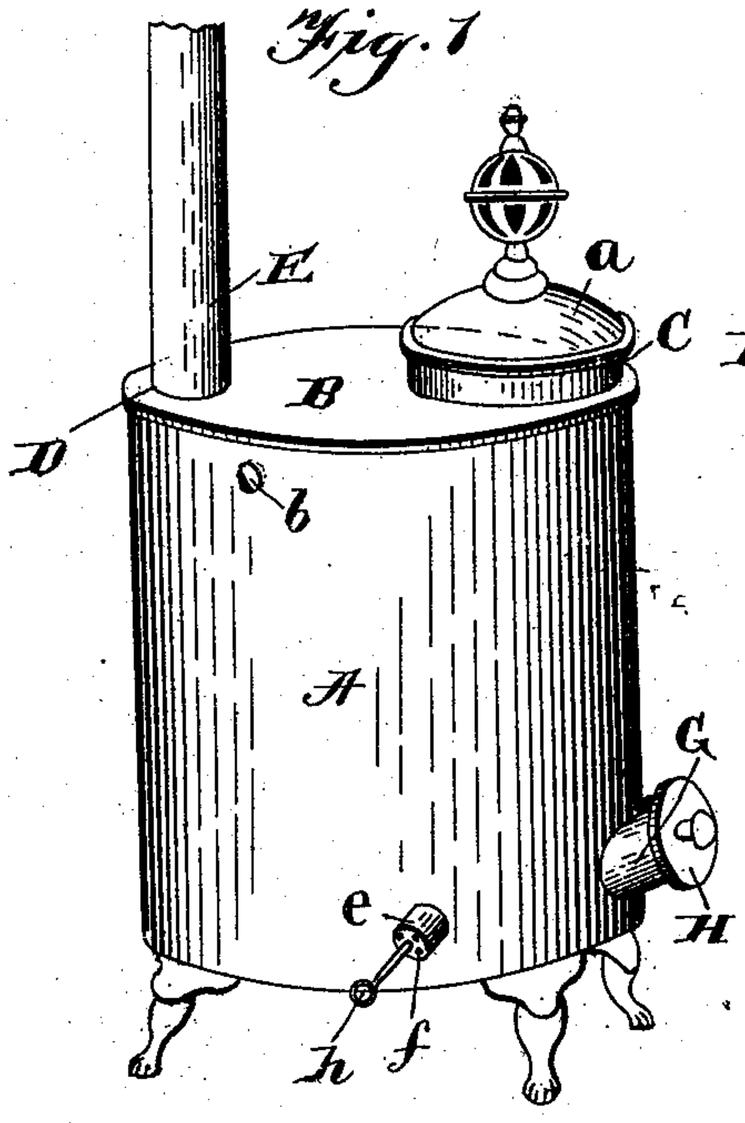


Fig. 2.

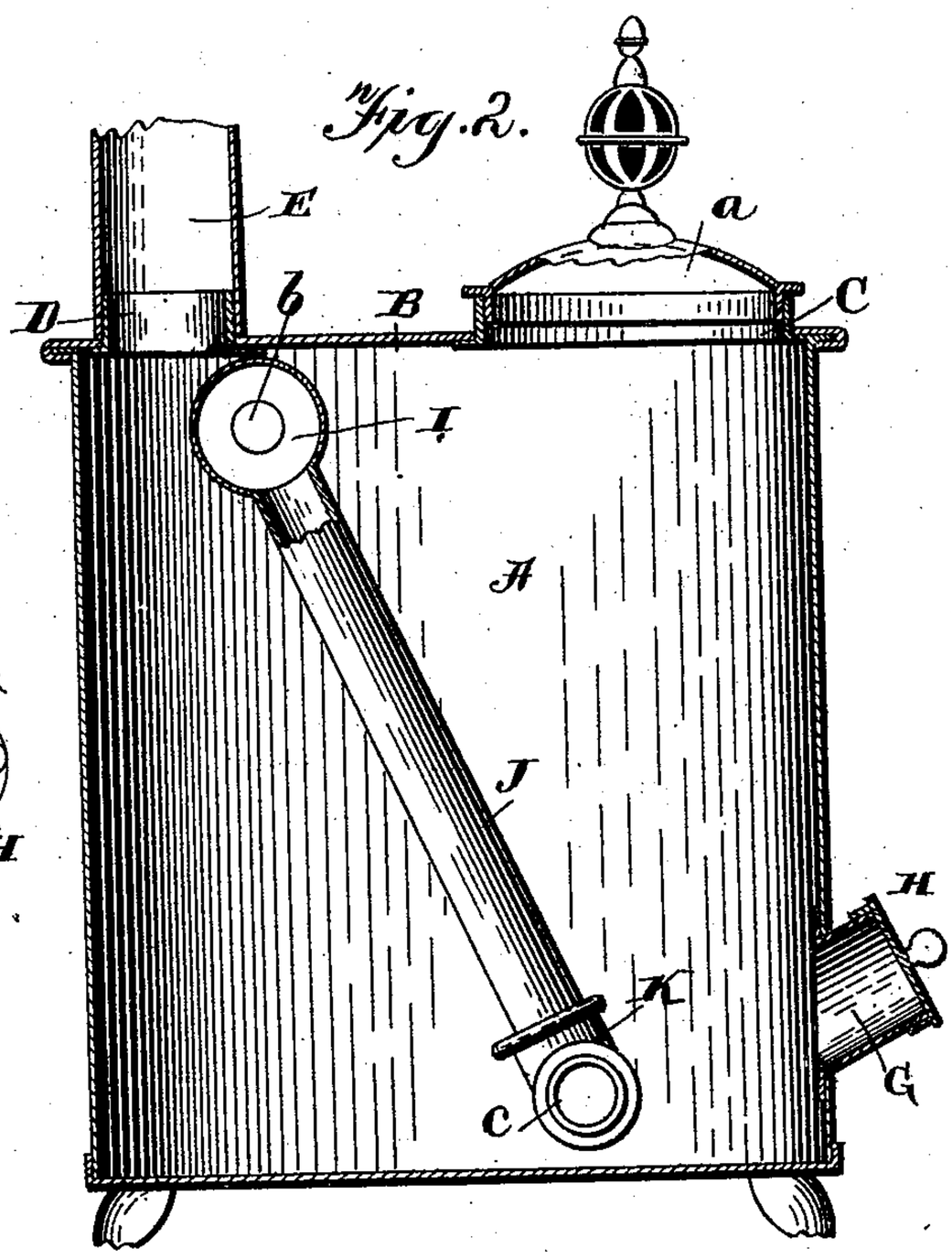


Fig. 3.

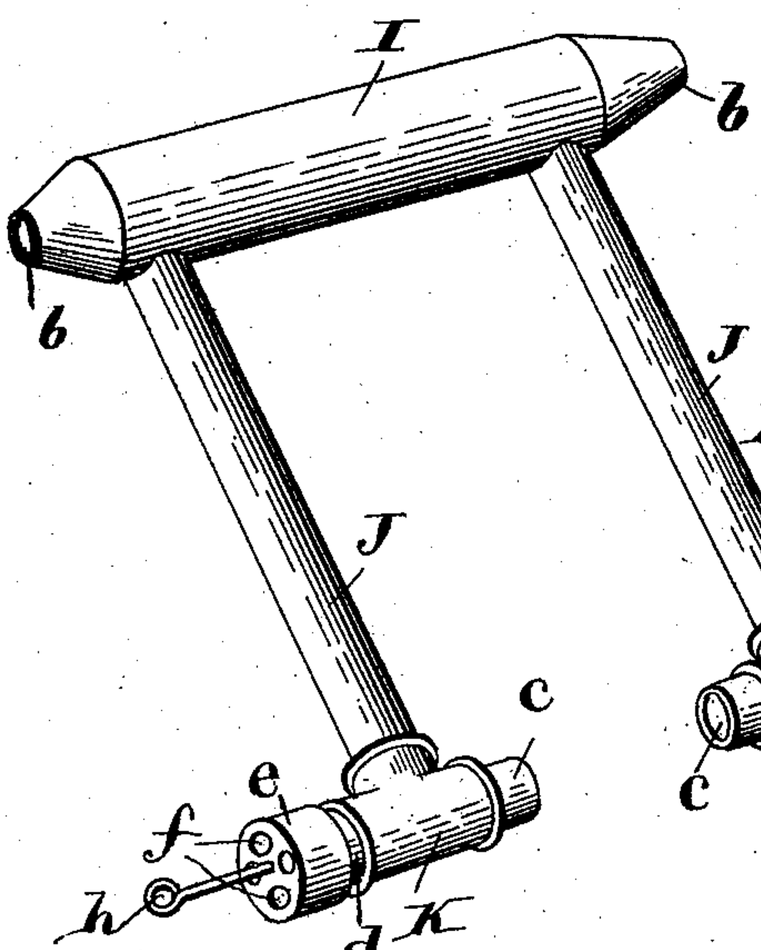
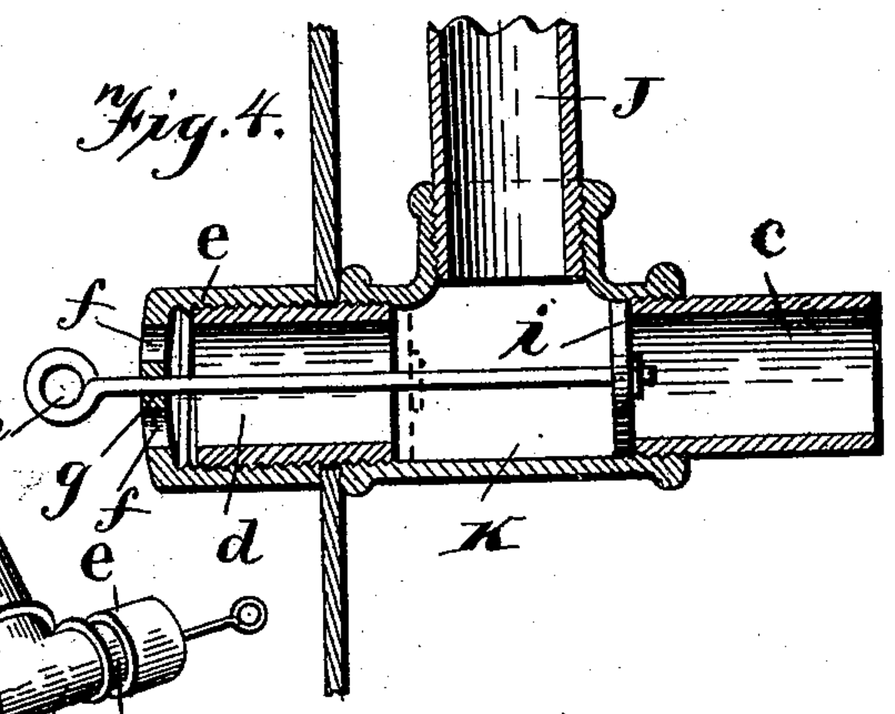


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN WESLEY WILSON AND WILLIAM WHARTON WILSON, OF DALLAS, TEXAS.

AIR-TIGHT HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 605,037, dated May 31, 1898.

Application filed July 28, 1897. Serial No. 646,256. (No model.)

To all whom it may concern:

Be it known that we, JOHN WESLEY WILSON and WILLIAM WHARTON WILSON, of Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Air-Tight Heating-Stoves; and we 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to improvements in air-tight heating-stoves; and it pertains to a stove having situated therein a hot-air drum or chamber having an exterior communication and tubes having communication therewith at their upper ends and their lower ends having interior and exterior communication, as and for the purpose hereinafter fully described, and particularly pointed out in the claims.

The object of our invention is to provide a stove with a hot-air drum or chamber in its upper portion, the said drum or chamber having communication with the atmosphere outside of the stove and provided with downwardly-projecting tubes having their lower ends in communication with the interior and exterior of the stove, and means for closing either of these communications, whereby a draft may be caused upon the fire through the said hot-air drum or chamber and the tubes, or air taken from the exterior of the stove through the tubes and the hot-air chamber and then passed into the room.

In the accompanying drawings, Figure 1 is a perspective view of the stove which embodies our invention. Fig. 2 is a longitudinal vertical sectional view of the same. Fig. 3 is a detached perspective view of the air-tubes removed from the stove. Fig. 4 is an enlarged longitudinal sectional view through the lower end of the tubes and illustrating the operation of the valve for regulating the draft.

A indicates a stove of any desired form or construction. In the present instance, however, our invention is shown as applied to what is known as "air-tight" heating-stoves and in which either wood or coal may be burned. The casing of this stove may be of the shape here illustrated or of any other preferred form without departing from the spirit of our invention.

The top B of the stove is provided with an opening C, through which the fuel is fed into the stove, and also with an opening D, to which the stovepipe E is attached. At the front and lower portions of the stove is a flanged opening G, through which the ashes are to be removed, and this opening is closed by means of a suitable flanged cap H. The opening C, through which the fuel is fed, is provided with a cap *a* for closing it, and the cap is provided with preferably an ornamental projection forming a handle, by means of which it is either removed or placed in position thereon.

Projecting transverse the upper portion of the tube and in a line between the fire and the stovepipe-opening is a hot-air drum or chamber I, having its open ends extending through the casing of the stove, as shown at *b*, and communicating with the atmosphere. Projecting downward and forward to about the center of the stove and near the bottom thereof are the tubes J, which are provided at their lower ends with the T connection K, having open ends, as clearly shown. It will be noted that the inner ends of these tubes K are in communication with the interior of the stove and their outer ends in communication with the atmosphere outside of the stove. The T-joints K, forming the transverse tubes at the lower ends of the tubes J, are provided at their inner ends with a bushing *c* and at their outer ends with a screw-threaded bushing *d*, the said bushings *d* projecting beyond the ends of the T connections K and through the stove-casing. Placed upon the projecting ends of these bushings *d* are the screw-threaded caps *e*, provided with a series of openings *f* and with a central opening *g*. Passing through this central opening *g* is a valve-stem *h*, carrying at its inner end a disk valve *i* of a diameter to fit snugly the tubes or T connection K when moved to either side of the lower end of the pipe J. The inner bushings *c* of the transverse portions of the T connections K serve to limit

the inward movement of the valves *i* and also form a seat therefor, while the inner ends of the bushing *d* serve to limit the outward movement of the valves and also form a seat for them when drawn outward.

When either one or both of the valves *i* are drawn outward, the outer ends of the T connections K are closed and a draft is caused upon the fire down through the tubes J and the inner end of the T connections at their lower ends and thence through the stovepipe to the chimney. This is so for the reason that the ends of the hot-air chamber are about two inches in diameter, while the stovepipe is about six inches in diameter, making a stronger draft up through the chimney and drawing the air from the room downward through the pipes J and into the fire, thus causing a draft thereon for either starting or increasing the fire. When the position of the valves *i* is reversed—that is, forced inward—the inner ends of the T connections K are closed, as will be readily understood, and a draft is then caused upward through the openings *f* of the cap E, through the pipes J, into the hot-air chamber, and thence into the room. In this manner the heating capacity of the stove is greatly increased through the use of the hot-air chamber, which is situated in the stove and preferably in a line of the draft from the fuel to the stovepipe, thus affording a large heating-surface for the heating of the air to be fed into the room.

By this construction it will be apparent that we are enabled to cause a draft upon the fire at the most effective point when starting the fire or when it is desired to increase its burning and also when desired to cause a flow of air through the hot-air chamber, as before described, taking it from a point near the floor and heating it and then feeding it into the room, which greatly increases the heating capacity of the stove as compared to one without such an attachment.

It will be noted also that, if desired, the details of construction of our invention for accomplishing the operation herein described may be varied by skilled mechanics without departing from the spirit of our invention, which is to provide a hot-air heating-drum within the stove-casing and to provide means for causing a draft either outward or inward through the drum for the purpose of either increasing the draft upon the fire or of increasing the heating capacity of the stove, and we do not, therefore, limit ourselves to the specific construction herein shown and described for accomplishing that purpose.

We also desire it understood that different forms of valves may be used for effecting the objects herein described and without departing from the spirit of our invention.

While the stove here shown and described is more especially intended for the burning of wood, as in the common air-tight heating-stoves, yet, if desired, this invention may be applied to different forms of stoves, and coal may be burned in this form of stove by providing a suitable grate, and in this instance the openings of the inner ends of the T connections K would preferably be beneath the grate, so that when a draft is caused upon the fire it would come from below—the most effective point.

The caps *e* serve to clamp the T connections K to the stove, as illustrated, and support the lower ends of the tubes J by this clamping action to the stove-casing, which provides a very simple and effective means of supporting and connecting the lower ends of the tubes J and of effecting an interior and exterior communication for the said tubes.

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

1. A hot-air stove comprising a casing, the hot-air drum and tubes situated therein and having external and internal communications, and a regulating member adapted to control the said interior and exterior communications, the parts operating in the manner substantially as described.

2. A hot-air stove comprising a casing, a hot-air drum extending across the upper portion thereof and having communication with the atmosphere outside of the casing, depending tubes connected therewith and within the said casing, and tubes extending transverse the lower end of the depending tubes, the said transverse tube having internal and external communications, and means for controlling the said communications of the transverse tube, substantially as described.

3. A hot-air stove comprising a casing, a hot-air tube or drum situated therein and having an external communication, a tube having internal and external communications at the lower portion of the stove, and communicating with the hot-air tube or drum, and a member for controlling the internal and external communications of said tubes, substantially as described.

4. A hot-air stove comprising a casing, a hot-air tube or drum extending transverse the upper portion of the stove and having communication with the atmosphere outside of the stove-casing, tubes extending downward near the ends of the air-tube and within the casing, and tubes extending transverse the lower ends of the downwardly-extending tubes, the said transverse tubes having internal and external communications or openings, and valves situated within the tubes for closing the internal or external openings, substantially as described.

5. A hot-air stove comprising a hot-air drum and tubes forming a U in shape, the transverse portion of the U being at the upper portion of the casing, and the lower ends or extremities of the U provided with internal and external communications, and means for controlling the said communications, substantially as described.

6. In a hot-air stove, the combination of a

hot-air drum or tube extending across the upper portion of the casing and having external communication, tubes extending downward from the said air-tube and having transverse internal screw-threaded sockets, external screw-threaded tubes passing through the said sockets, and external clamps placed upon the outer ends of the transverse tubes and clamping them in position, substantially as described.

7. A hot-air stove comprising a hot-air drum spanning the upper portion thereof and having exterior communications, tubes depending from said drum to the lower portion of the stove, transverse screw-threaded tubes at the lower ends of the depending tubes, the screw-threaded tubes passing through the stove, and screw-threaded clamping-caps upon the projecting ends of the screw-threaded tubes, the caps having openings, substantially as described.

8. A hot-air stove comprising a casing, a hot-air tube or drum extending across the upper portion thereof and communicating with the atmosphere, and a tube extending downward therefrom within the casing, the lower end of the tube having an interior and exterior communication, substantially as described.

9. A hot-air stove comprising a casing, a hot-air drum and tubes forming substantially a U in shape, the transverse portion of the U extending across the casing and having its ends communicating with the atmosphere, the tubes having one end communicating with the drum and their opposite ends having interior and exterior communications, substantially as described.

10. A hot-air stove comprising a casing, a drum and tubes forming substantially a U in shape, the drum extending across the casing and communicating with the atmosphere, the tubes having one end communicating with the drum and their opposite ends communicating with the atmosphere, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN WESLEY WILSON.
WILLIAM WHARTON WILSON.

Witnesses:
H. C. HOSKINS,
GEO. JACKSON.