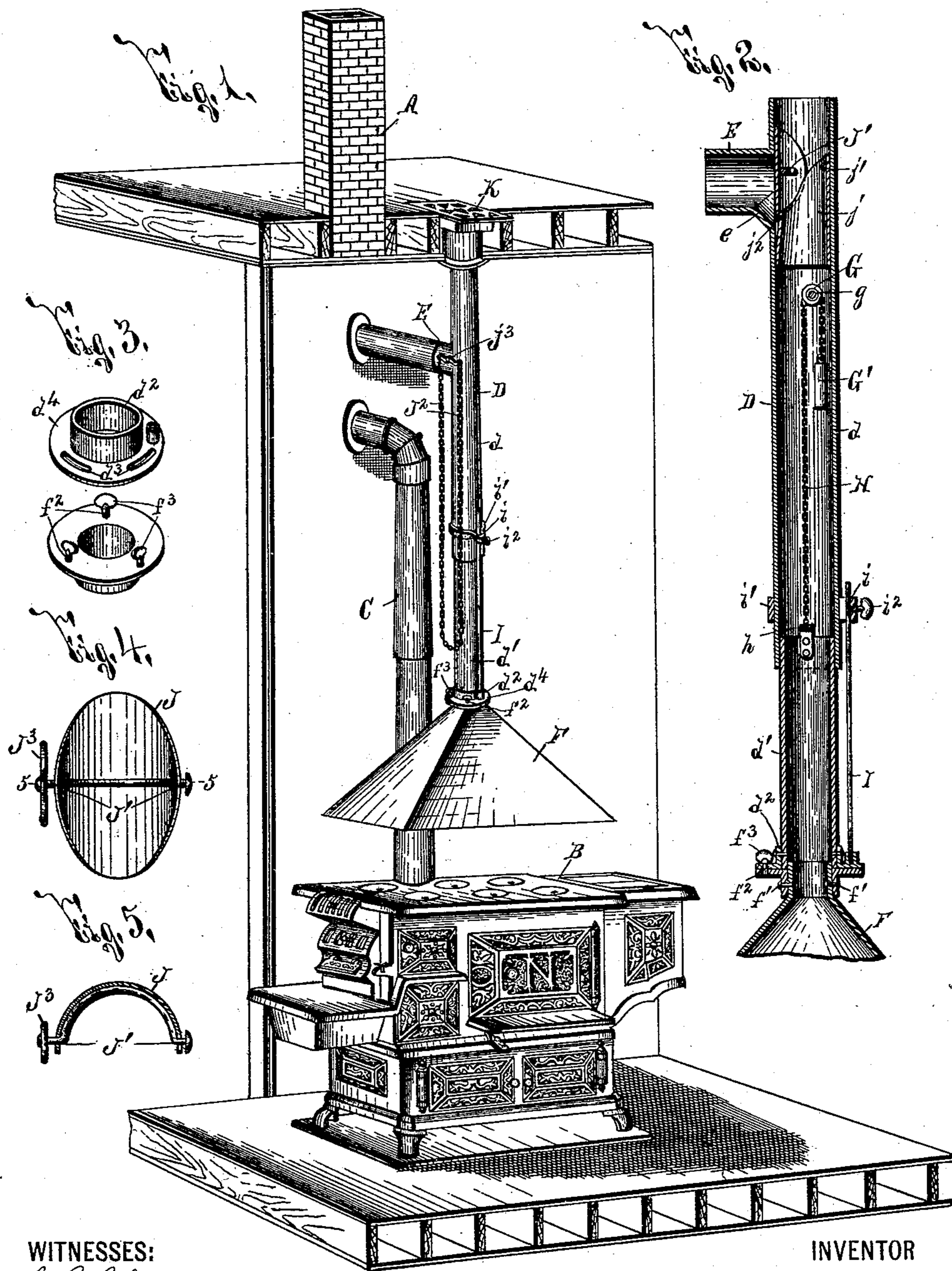


(No Model.)

C. H. NORTON.
VENTILATOR.

No. 495,141.

Patented Apr. 11, 1893.



WITNESSES:

H. C. Chase,
E. Schoeneck,

INVENTOR

Clark H. Norton
BY
Arthur C. Parsons
ATTORNEY

UNITED STATES PATENT OFFICE.

CLARK H. NORTON, OF SYRACUSE, NEW YORK.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 495,141, dated April 11, 1893.

Application filed October 14, 1891. Serial No. 408,660. (No model.)

To all whom it may concern:

Be it known that I, CLARK H. NORTON, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Ventilators, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in ventilators, and has for its object the production of a simple and effective device which is particularly simple, strong, durable and economical in manufacture.

To this end the invention consists, essentially, in a hood adapted to receive the heated air and gases, a pipe communicating with the hood for conducting the heated air and gases therefrom, a branch pipe leading from the former pipe for conducting the air and gases in another direction, an inner sleeve at the union of said pipes, and a damper movably mounted at the union of said pipes and adapted to make contact with said inner sleeve for varying the direction of the heated air and gases.

The invention furthermore consists in a pipe consisting of two sections, one telescoping within the other, a collar on the lower section or hood nipple, a collar on the hood removably secured to the former collar, a guide on the upper section of pipe, and a rod having one extremity secured to the hood and the other movable in said guide; and in the detail construction and arrangement of the parts, all as hereinafter more particularly described and pointed out in the claims.

In describing this invention, reference is had to the accompanying drawings, forming a part of this specification, in which, like letters indicate corresponding parts in all the views.

Figure 1 is an isometric perspective, representing a section of an upper and lower floor, an upright partition, a portion of a chimney, a range, and my ventilator operatively mounted above the range and connected to the chimney independent of the pipe. Fig. 2 is a vertical sectional view of the upper portion of the hood and the ventilator pipe communicating therewith. Fig. 3 is an isometric perspective of the detached collars adapted to be secured to the hood and to the lower sec-

tion of the ventilator pipe. Fig. 4 is a face view of a damper movably mounted in the pipe of my ventilator, and Fig. 5 is a transverse horizontal sectional view, taken on line —5—5—, Fig. 4.

In many ventilators, as heretofore constructed, more or less difficulty is experienced from the fact that the ventilator pipe does not open into the chimney independent of the stove pipe, but usually discharges directly into the stove pipe.

Another source of ineffectiveness in many ventilators is the lack of a simple and effective damper for governing the direction of which the heated air and gases are passed, and in the use of a hood, which, when in close proximity to the stove or range is unsupported from lateral movement, and is thus liable to become swayed a sufficient distance to bend the nipple or short section of pipe secured to the hood and prevent the same from telescoping within the upper section.

In my invention the ventilator pipe is entirely independent of the ordinary stove pipe, a simple construction of damper and internal sleeve regulates the flow within the ventilator pipe, lateral movement of the hood is entirely obviated at any elevation, and the component parts thereof are so simple and strong as to greatly increase the durability of the ventilator.

—A— represents any suitable chimney provided with a central flue or outlet passage; —B— any suitable construction of stove or range, and —C— a stove pipe connected to the stove and to the chimney for conducting the products of combustion into the chimney.

—D— is the ventilator pipe consisting of the upper and lower telescopic sections —d—d'—, the lower one forming an upwardly extending nipple on the hood —F—.

—E— is a branch pipe communicating with the upper extremity of the pipe —D— and piercing the chimney at a point at one side of the upper end of the stove pipe —C— and preferably at a point somewhat elevated above said end of the pipe —C— and discharging into the outlet passage of the chimney. The hood —F— is adapted to be moved in close proximity to the stove or range and to conduct the heated air or gases into the pipe —D—.

It is well known that although the chimney of a house is used constantly, the stove is frequently changed as the life of a stove is but limited. Consequently, I secure the hood to the thimble —*d'*— removably in order that if the small hood suitable for an ordinary stove has been in use, and it is desired to replace the same with a hood suitable for a range, the old hood may be readily detached and a new one instantly secured in position at a minimum expense. Any suitable means for securing the hood to the pipe section —*d'*— may be used.

At Figs. 1, 2 and 3 I have shown a collar formed of cast metal or other suitable material rigidly secured to the hood by screws —*f'*— and provided with movable projections —*f²*— having one or more laterally extending arms —*f³*—. At the lower extremity of the pipe section —*d'*— is a collar —*d²*— having slots —*d³*— of greater length than width whereby when the arms —*f³*— of the projections —*f²*— are in line with said slots, the same may be readily forced to the upper face of the flange —*d⁴*— upon said collar, and the hood firmly held in position by a quarter turn of the projections —*f²*—.

—*G*— is a pulley or round bearing mounted within the pipe section —*d*— upon the pin —*g*—, and —*H*— a flexible chain secured at —*h*— to the upper end of the pipe —*d'*— telescoping within the section —*d*— and having its opposite extremity passed over the pulley —*G*— and secured to a counterbalance —*G'*— for the hood —*F*— and its projecting thimble or pipe section —*d'*—.

It will readily be understood that with the utmost ease, a comparatively weak person may readily elevate the hood to the required plane and then depress the same in position over the stove to receive the heated air radiating from the stove, or the gases produced by cooking or other household industry.

It is evident that the hood must have considerable movement in order to accommodate the various household utensils, and that for the sake of economy, the least possible amount of pipe —*D*— must be used. Consequently, when the hood is in a low down position, and is unsupported by the top of the stove or range, there is great liability of the hood being unduly swayed laterally and the pipe sections being thereby bent or injured, whereupon an easy telescopic movement of the sections —*d*—*d'*— is rendered impossible. To entirely obviate this undesirable result, I provide a stiff rod —*I*— having one end firmly secured to the flange —*d⁴*— of the collar —*d²*— and the other movable in the guide or eye —*i*— provided on a collar —*i'*— mounted upon the pipe section —*d*—. As the hood is raised, the rod —*I*— slides through the eye or guide —*i*— and when the desired adjustment of the hood is reached, a suitable clamp —*i²*— movable in the eye or guide —*i*—, bears against the rod —*I*—, and effectually holds the hood in its adjusted position. On the

other hand, the rod slides equally easy when the hood is depressed, and the clamp —*i²*— may then be operated to retain the hood as before.

—*J*— represents the damper movably mounted at the point of union of the branch pipe —*E*— and the pipe section —*d*—, and —*j*— is an inner sleeve also secured at said point of union and so formed that one extremity —*j'*— of its top edge projects above the other extremity —*j²*—. This lower extremity —*j²*— projects, however, just above the incline —*e*— at the lower peripheral edge of the inner end of the pipe —*E*—, or more strictly speaking, a nipple formed upon the pipe —*D*— and adapted to receive the end of the pipe —*E*—.

The damper —*J*— consists of a plate of elliptical outline formed concavo convex in cross section and mounted upon the pivot —*J'*— arranged above a portion of the top edge of the sleeve —*j*— and preferably slightly below the upper extremity —*j'*— of said upper edge.

As shown at Fig. 2, one extremity of the damper rests firmly against the inner periphery of the pipe section —*d*— at a point above the passage to the branch pipe —*E*—, and the other extremity bears against the lower edge —*j²*— of the sleeve —*j*—, effectually and positively cutting off the passage to the branch pipe —*E*—. On the contrary, when the damper —*J*—, as shown by dotted lines at Fig. 2, is swung into a horizontal position, its upper end bears against the upper end of the inner sleeve —*j*— and the opposite end against the upper periphery of the pipe —*E*—, thus positively shutting off the upward passage of the heated air or gas through the upper extremity of the pipe section —*d*—. This damper is extremely simple and effective, and is readily operated by a chain —*J²*— secured to the opposite extremities of a lever —*J³*— mounted on the pivotal pin of said damper. The chain —*J²*— is extended downwardly into close proximity with the top of the hood so as to be readily engaged by the attendant.

The upper extremity of the pipe —*D*— may pass to any desired point, but I prefer, as shown at Fig. 1, to mount thereon a suitable ventilator —*K*—, whereby, when nothing but heated air is passed through the pipe —*D*—, the damper may be actuated to its vertical position, as shown at Fig. 2, thus preventing the passage through the branch pipe —*E*—, and permitting the utilization of the air for heating an upper room. When, however, gases are generated and passed through the pipe —*D*—, the damper is actuated to its horizontal position and by the pipe —*E*—, the gases are directed to the chimney instead of being allowed to contaminate the upper room, as would be the case were they permitted to pass upwardly and through the ventilator —*K*—.

The operation of my invention will be readily perceived from the foregoing description and upon reference to the drawings, and it

will be particularly noted that the same is simple, durable and effective.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a chimney having an outlet passage, a stove and a stove-pipe for conducting the products of combustion from the stove to the outlet passage of the chimney; of a hood mounted above the stove and movable rectilinearly toward and away from the same and formed with a contracted elevated central portion, a telescoping ventilator pipe opening from said contracted portion of the hood for conducting the heated air and gases from the hood, and a branch pipe communicating with the ventilator pipe and opening into the outlet passage of the chimney at one side of the stove-pipe for discharging said heated air into the said chimney outlet passage independent of the stove-pipe, substantially as described.

2. The combination with a hood, a ventilator pipe communicating with the hood for conducting therefrom the heated air and gases passed into the same, a branch pipe leading from the former pipe for conducting said air and gases in another direction, an inner sleeve at the union of said pipes, and a damper movably mounted at the union of said pipes and adapted to make contact with said inner sleeve for varying the direction of said heated air or gases, substantially as and for the purpose specified.

3. In combination with a hood, a ventilator pipe communicating with the hood for conducting therefrom heated air and gases passed into the same, a branch pipe leading from the former pipe for conducting said air and gases in another direction, an inner sleeve at the point of union of said pipes formed with one extremity of its upper edge disposed in a higher plane than the other extremity thereof, a damper formed of concavo convex cross section movably mounted at the union of said pipes and adapted to make contact with the respective ends of the upper edge of said sleeve for varying the direction of said heated air and gases, substantially as and for the purpose set forth.

4. In combination, an upper pipe section —*d*—, a lower pipe section —*d'*— telescoping within the former section, a collar —*i'*— on the lower extremity of the pipe section —*d*— formed with an eye —*i*—, a collar —*d²*— on the pipe section —*d'*— having a laterally projecting flange —*d⁴*—, a rod —*I*— having one end rigidly secured to the flange —*d⁴*— and the other movable in the eye —*i*—, and a clamp —*i²*— movable in the eye —*i*— for se-

curing the rod —*I*— in its adjusted position, substantially as described.

5. In combination, an upper pipe section —*d*—, a lower pipe section —*d'*— telescoping within the former section, a collar —*i'*— on the lower extremity of the pipe section —*d*— formed with an eye —*i*—, a collar —*d²*— on the pipe section —*d'*— having a laterally projecting flange —*d⁴*—, a rod —*I*— having one end rigidly secured to the flange —*d⁴*— and the other movable in the eye —*i*—, a clamp —*i²*— movable in the eye —*i*— for securing the rod —*I*— in its adjusted position, and a ventilator hood detachably secured to the collar —*d²*—, substantially as and for the purpose specified.

6. In combination, an upper pipe section —*d*—, a lower pipe section —*d'*— telescoping within the former, a collar —*i'*— on the lower extremity of the pipe section —*d*— formed with an eye —*i*—, a collar —*d²*— on the pipe section —*d'*— having a laterally projecting flange —*d⁴*— formed with elongated slots —*d³*—, a rod —*I*— having one end rigidly secured to the flange —*d⁴*— and the other movable in the eye —*i*—, a clamp —*i²*— movable in the eye —*i*— for securing the rod —*I*— in its adjusted position, and a ventilator hood formed with a collar provided with projections —*f²*— adapted to enter the slots —*d³*— and having laterally extending arms —*f³*— for resting upon the top face of the flange —*d⁴*—, substantially as and for the purpose described.

7. In combination, a hood, a collar secured to the end of the hood, and provided with movable projections having a laterally projecting arm, a pipe communicating with the hood for conducting therefrom the heated air and gases passed to the hood, a collar secured at one end of said pipe and formed with slots of greater length than width for receiving said projections carrying the laterally extending arms, whereby, when the projections are partially rotated, the arms bear against the sides of the slots, and hold the hood in position, a second pipe telescoping with the former pipe, a guide on the latter pipe, and a rod having one end secured to the collar on the hood and the other movable in said guide, substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 10th day of October, 1891.

CLARK H. NORTON.

Witnesses:

EMMONS H. SANFORD,
L. M. BAXTER.