

(No Model.)

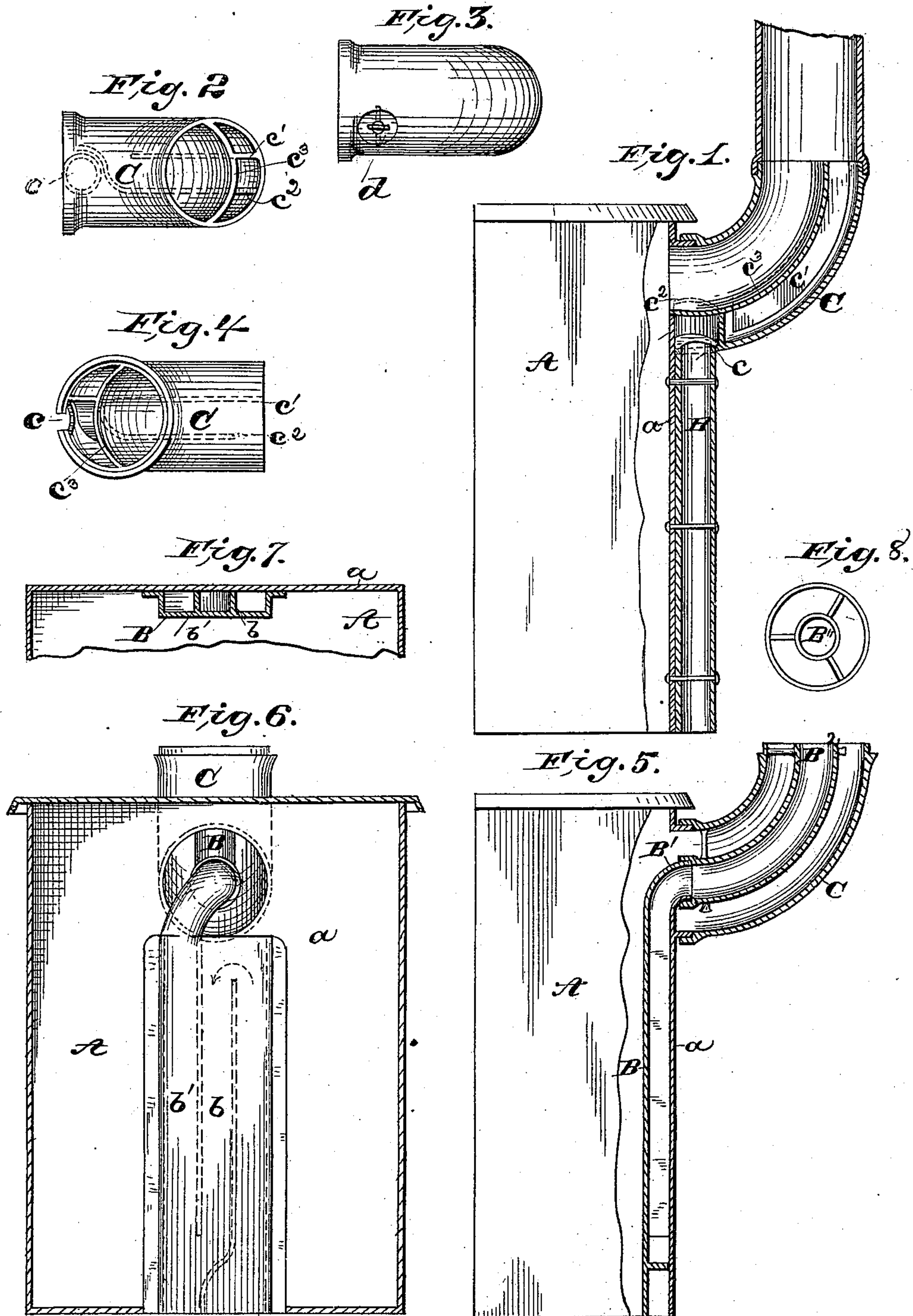
2 Sheets—Sheet 1.

W. M. BRINKERHOFF.

VENTILATING ATTACHMENT FOR STOVES.

No. 354,766.

Patented Dec. 21, 1886.



Witnesses:

E. T. Walker

Wm. E. Dyre

Inventor:

Wm. M. Brinkerhoff
by his Attorneys
Whitaker & Preston

(No Model.)

2 Sheets—Sheet 2.

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Fig. 10

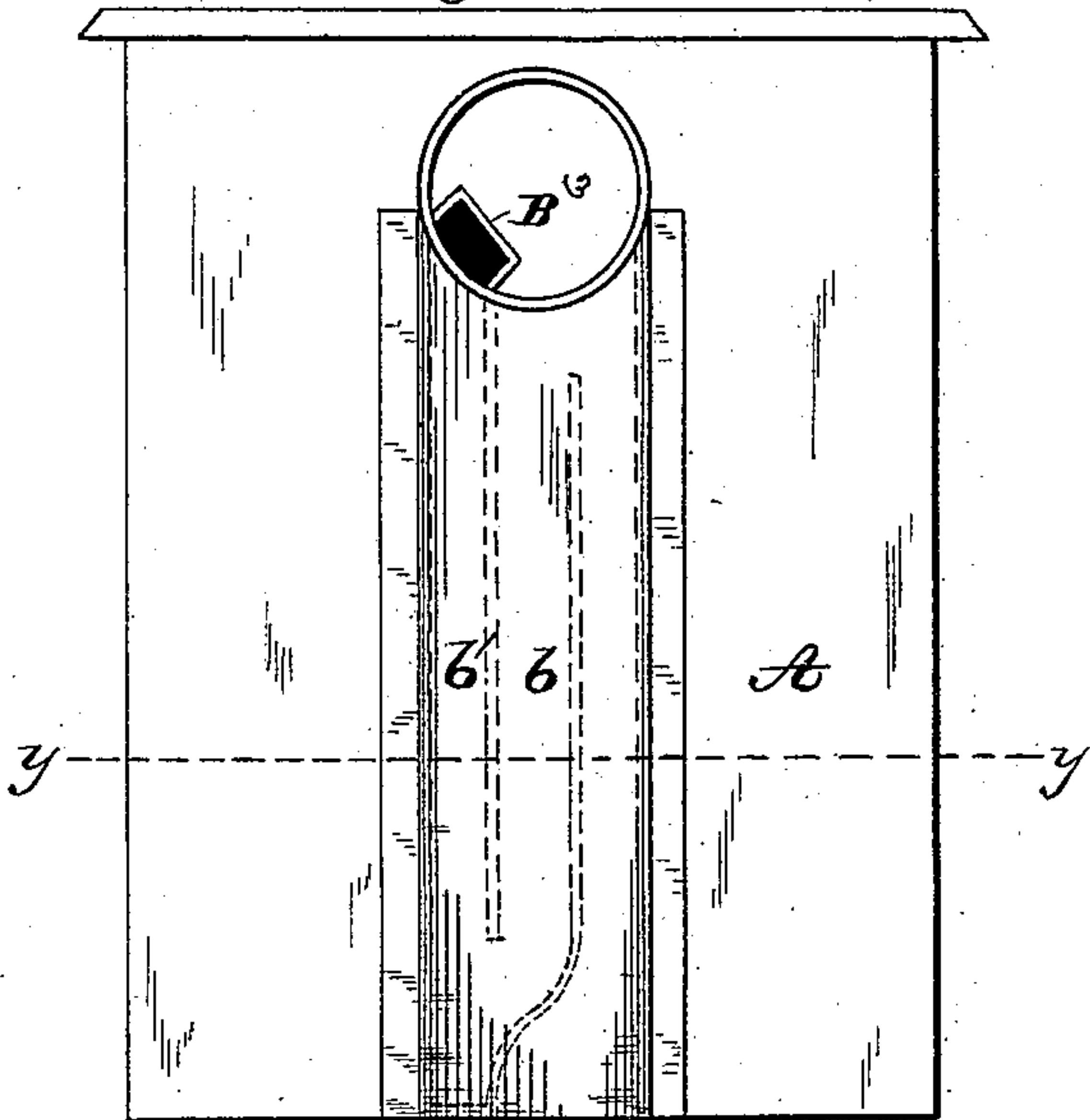


Fig. 9.

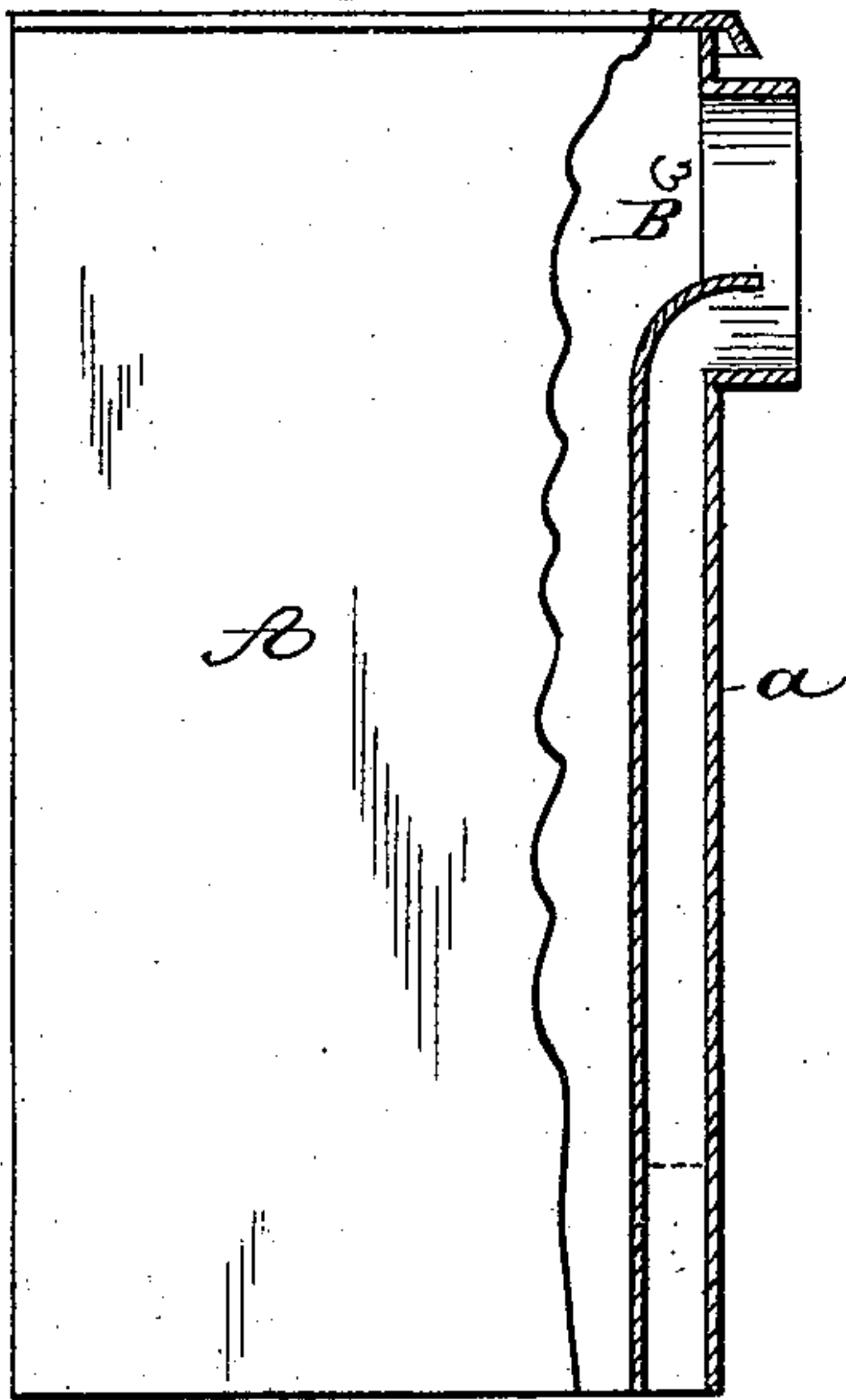


Fig. 12. b' b Fig. 13.

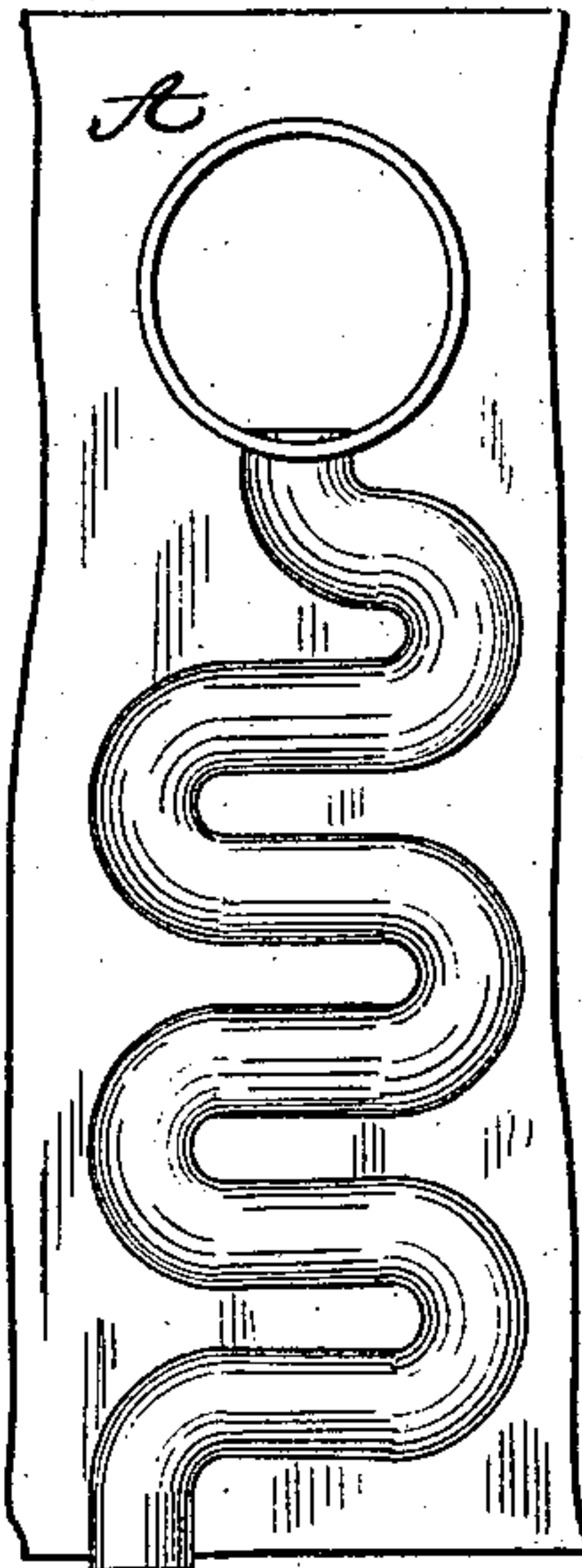
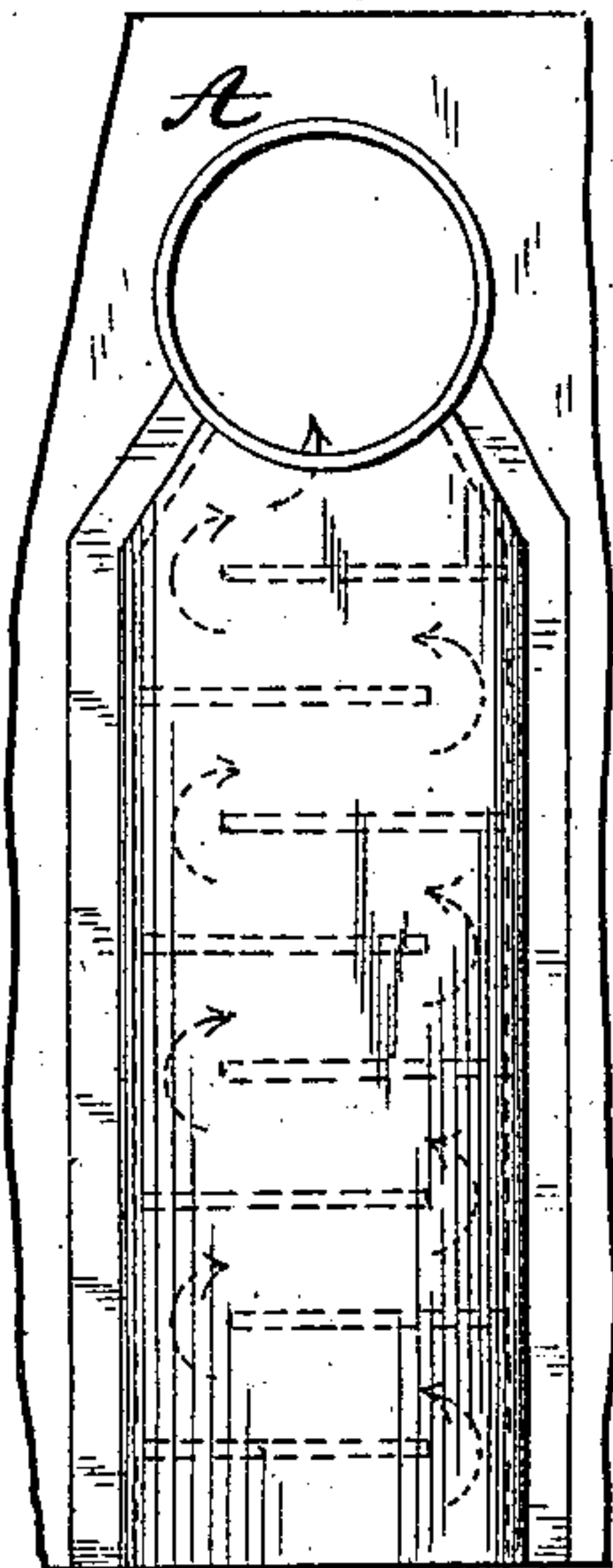


Fig. 14.

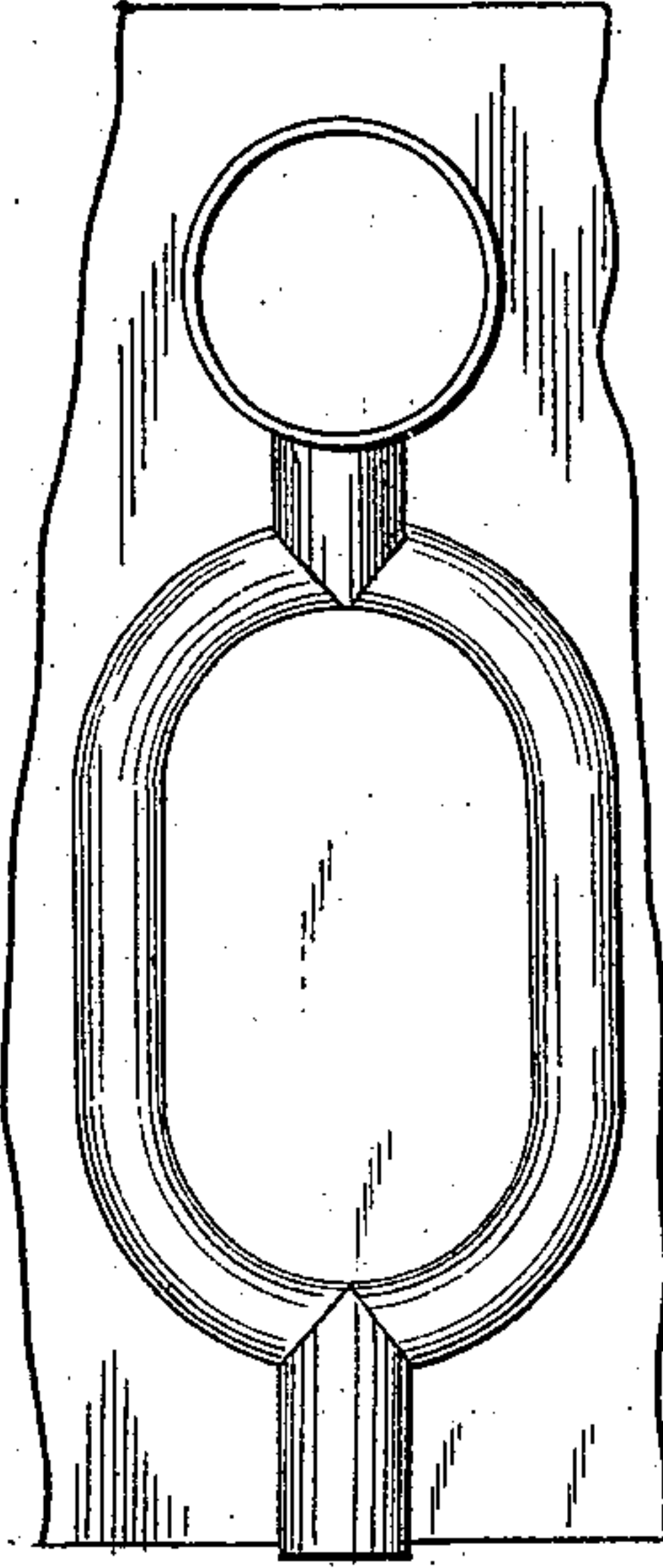
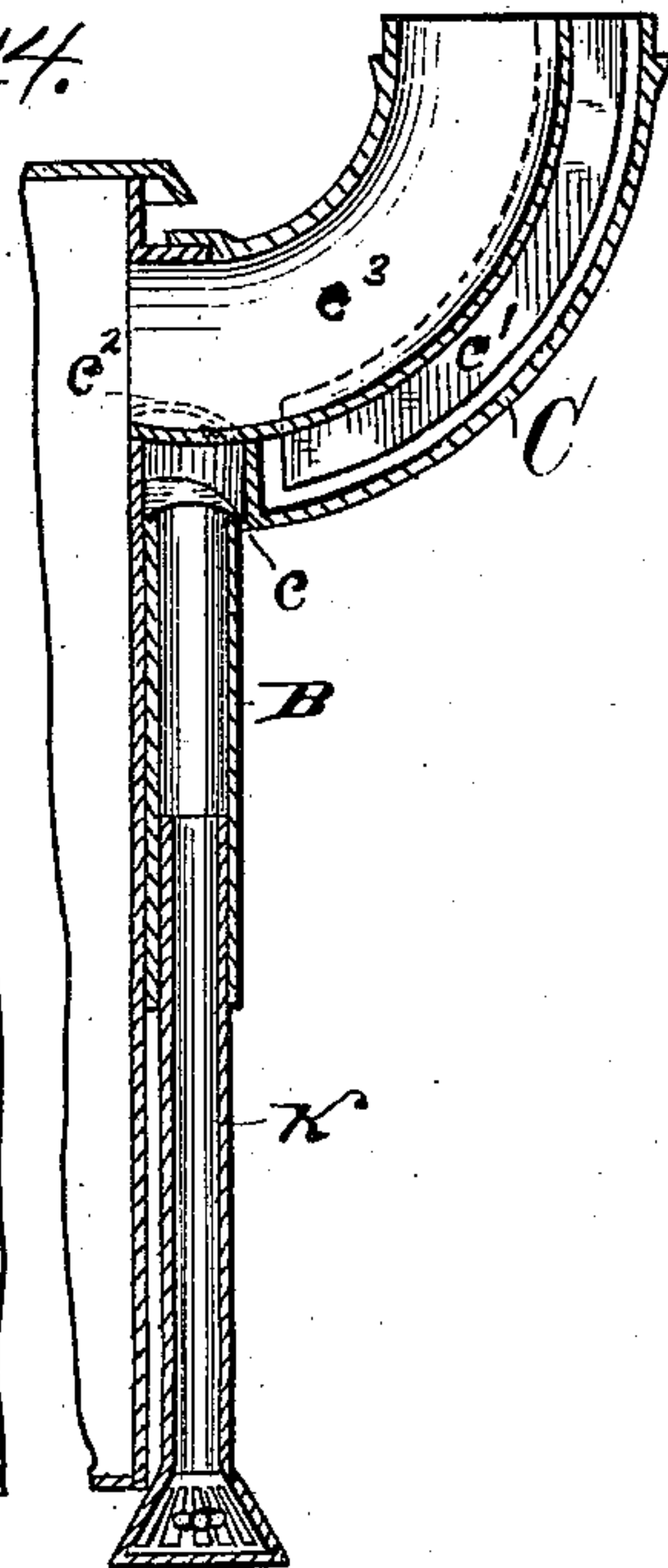


Fig. 15.



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UNITED STATES PATENT OFFICE.

WARREN M. BRINKERHOFF, OF AUBURN, NEW YORK.

VENTILATING ATTACHMENT FOR STOVES.

SPECIFICATION forming part of Letters Patent No. 354,766, dated December 21, 1886.

Application filed July 24, 1886. Serial No. 208,985. (No model.)

To all whom it may concern:

Be it known that I, WARREN M. BRINKERHOFF, a citizen of the United States, residing at Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Ventilating Attachments for Stoves; and I 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 appertains to make and use the same.

My invention relates to ventilating attachments for stoves; and it consists in improvements upon the construction shown and described by me in Letters Patent No. 339,966, dated April 13, 1886, and No. 346,717, dated August 3, 1886.

In some instances it has been found desirable to apply my ventilator-tube to quite small stoves or stoves having the smoke-outlet but a short distance above the stove-bottom, and also to provide a construction which may be applied to stoves of different sizes already in use. Where the ventilating-passage is very short, the air in passing through the same does not become sufficiently heated, and in consequence the products of combustion in the smoke-outlet are chilled and the draft of the stove greatly impaired. In order to avoid this, I construct the ventilating-passage so that it shall traverse a considerable portion of space in close proximity to the wall of the stove or the wall of the smoke-outlet, and with this construction I may employ another, whereby this pipe may be extended or shortened, as circumstances may require.

In the drawings, Figure 1 represents a part of a stove having my improvement attached thereto, with the rear wall, ventilator-pipe, and smoke-outlet in section. Fig. 2 is a top view of the elbow forming the smoke-outlet in such construction. Fig. 3 is a bottom view of such elbow. Fig. 4 is a view of the end of the elbow next the stove. Fig. 5 is a view of a part of a stove having another form of my invention attached thereto, with the rear wall of the stove, ventilator-pipe, and smoke-outlet in section. Fig. 6 is a sectional view of a stove provided with such construction. Fig. 7 is a partial section on line *xx* of Fig. 6. Fig. 8 is a transverse section of the smoke-outlet shown in Fig. 6. Fig. 9 is a view of a portion of a

stove having a slightly different construction of ventilator-pipe attached thereto, with the rear wall of the stove in section. Fig. 10 is a rear view of such stove, with the construction of the main portion of the ventilator-tube shown in dotted lines. Fig. 11 is a partial section on line *yy* of Fig. 10. Fig. 12 is a partial rear view of a stove with another form of ventilator-flue attached, the construction of the flue being shown in dotted lines. Figs. 13 and 14 are views of additional constructions of ventilator-flues as placed inside of a stove. Fig. 15 shows section of rear wall of stove and smoke-outlet and an extensible ventilating-flue.

In the construction shown in Fig. 1 the ventilating-flue is shown as consisting of a straight pipe attached to the rear wall of a stove and connecting with a tortuous passage lying adjacent to the wall of the smoke-flue and discharging into the same. In this figure, A designates the body of the stove; *a*, the rear wall of the same; B, the ventilating-flue, and C the smoke-outlet. This smoke-outlet consists in this case of an elbow provided with the opening *c* through the lower wall of the same and the partitions *c'* *c''* *c'''* within the same. The partitions *c'* are located as shown in Figs. 2 and 4, whereby a tortuous passage is furnished for the air-current in the smoke-flue near the stove, thus insuring its being raised to a sufficient temperature to prevent its checking the draft of the stove. On the under side of this elbow is shown a covered opening, *d*, through which the air-passage may be cleaned from ashes, soot, &c.

In Fig. 5 the ventilator-pipe B is shown on the inside of the stove, and is provided with the partitions *b* and *b'*, forming a return or tortuous passage in the lower part of the same. The upper end of this flue is provided with an extension, B', which connects with a pipe, B², centrally located within the smoke-outlet. In Figs. 9, 10, and 11 is shown a similar construction of ventilator-flue, having at its upper end the portion B³, extending above the lower wall of the smoke-outlet and discharging into the same.

Fig. 12 shows a ventilating-pipe provided with horizontal partitions *g*, forming a tortuous passage for the air-current. Figs. 13 and 14 show other forms. All of these forms may

either connect with a pipe within the smoke-outlet or may discharge into such outlet, as shown in Figs. 9 and 10.

In Fig. 15 the main portion of the ventilator-pipe B is shown with a pipe, K, telescoping within the pipe B and forming the lower part of the ventilator-passage. The upper end of the pipe B connects with the tube B² within the smoke-outlet. This pipe B² may be of the form shown in my former patent, herein referred to; or the smoke-outlet may be provided with a tortuous passage, as shown in Fig. 15; or in some case I may find it desirable to construct the pipe B in the form shown in Figs. 5, 6, and 10, in which cases the pipe K will be fitted to telescope within that part of the air-passage formed by the partition b and the sides of the same.

It will be seen that in the construction shown in Figs. 1, 2, and 4 the air-current in the ventilating-passage is heated in the lower portion of the passage by radiation from the wall of the stove, and is then caused to pass through the tortuous passage of the elbow to receive its final and complete heating. In the form shown in Figs. 5 and 6 the air in passing through the tortuous passage formed in the lower part of the ventilating-flue is retained so long therein that it becomes quite highly heated before reaching the part B² of such flue. At this point and in the pipe B² it is exposed to the full heat of the products of combustion, and is thereby raised to nearly or quite the temperature of such products, thereby securing an effective draft for the air-current without impairing the draft of the stove. Where the length of the ventilating-passage below the smoke-outlet is sufficient to heat the air-current to the proper degree, the upper end of the ventilating-passage may be provided with the simple turn B³. (Shown in Figs. 9 and 10.)

In addition to the function of extending and contracting the length of the ventilating-passage, the telescoping parts B K may be used to regulate the draft through the same by shortening the passage when it is desired to reduce the draft, and extending it to increase it.

The flues, as described, may be made integral with the plates of the stove, or they may be made entirely separate and attached to the stove, as shown in Fig. 1, or they may be constructed by having one of the sides of the same formed by the rear wall of the stove, and the other by a plate bolted thereto, as shown in Figs. 6 and 12.

The tortuous flue construction adjacent to the rear wall of the stove may be united in the same construction with the tortuous flue in the smoke-outlet. These tortuous passages may be constructed of pipes turned backward or forward upon themselves.

What I claim, and desire to secure by Letters Patent, is—

1. The combination, with a stove, of a ventilating-passage separate from the air-supplying flues of the stove, communicating with the

open air at its lower end and passing in close proximity to the walls of the stove connecting with the smoke-outlet and discharging into the same, said passage intermediate of its ends being turned backward and then forward upon itself, substantially as described.

2. The combination, with a stove, of a ventilating-passage communicating with the air at its lower end, rising in close proximity to the wall of the stove, and discharging into the smoke-outlet, the said passage within the smoke-outlet being turned backward and then forward upon itself in a longitudinal direction within the same, substantially as described.

3. The combination, with a stove, of an elbow connected therewith forming the smoke-outlet, and a ventilating-passage, open at both ends, communicating with the outer air at its lower end, and having a portion of its length extending along the wall of the elbow, the said passage along the wall of the elbow being turned backward upon itself, a part of the wall of said turned portion being held detachably in place, substantially as described.

4. The combination, with a stove, of an elbow connected therewith forming the smoke-outlet, and a ventilating-passage, open at both ends, communicating with the outer air at its lower end, and having a portion of its length extending along the wall of said elbow, the said passage along the wall of said elbow being turned backward upon itself, and having a portion of its outer wall detachably connected with the other parts, substantially as described.

5. The combination, with a stove, of a ventilating-passage separate from the flues of the stove, communicating with the outer air at its lower end, and discharging into the smoke-outlet at its upper end, the said ventilating-passage intermediate of its ends diverging from a direct course and having two or more parallel portions formed therein, the whole of the diverging portion of said passage lying in close proximity to the walls of the stove or its outlet, substantially as described.

6. The combination, with a stove, of a ventilating-passage separate from the flues of the stove, communicating with the outer air at its lower end, and discharging into the smoke-outlet of the stove at its upper end, the said passage intermediate of its ends being provided with three parallel passages, one of the side passages communicating with the open air and the other with the discharge end of the pipe, and the central passage connecting the side passages, the whole of said ventilating-passage lying in close proximity to the wall of the stove or its smoke-outlet.

7. The combination, with a stove, of a ventilating-passage separate from the flues of the stove, communicating with the air at its lower end, rising in close proximity to the wall of the stove, with a smoke-flue provided with three parallel passages, one of the side passages connecting with the ventilating-passage, and the opposite side passage discharging into the smoke-flue and the central passage con-

necting the side passages, substantially as described.

5 8. The combination, with a stove, of a smoke-outlet provided with a tortuous air-passage of a ventilating-flue lying adjacent to the wall of the stove and connecting with the air-passage and the smoke-outlet, said ventilating passage being provided with an extensible portion, substantially as described.

10 9. The combination, with a stove, of a ventilating-passage communicating with the air at its lower end, rising adjacent to the wall of the stove, and discharging into the smoke-outlet, the said ventilating-passage being provided
15 intermediate of its ends with a return portion, and having at its lower end an extensible portion, substantially as described.

20 10. The combination, with a stove, of a ventilating-passage communicating with the air at its lower end, rising adjacent to the wall of the stove, and discharging into the smoke-pipe, the said ventilating-passage being provided at its lower end with an extensible portion, substantially as described.

25 11. As a new article of manufacture and sale, an elbow for a smoke-pipe, provided with a passage which communicates with the open air at one extremity and extends toward

the discharge end of the elbow, to which it is connected, said passage intermediate of its ends
30 being turned backward upon itself, substantially as described.

12. The combination, with a stove, of a ventilating-passage separate from the flues of the stove, communicating with the outer air at
35 one end below the base of the stove-body and discharging into the smoke-outlet at the other end, the said passage intermediate of its ends diverging out of a straight line and traversing in a curved or angular direction on or
40 adjacent to the walls of the stove-body or its smoke-outlet, and provided with a damper, substantially as described.

13. As a new article of manufacture, an elbow for a smoke-pipe, provided with a pas-
45 sage which communicates with the open air at one extremity and extends toward the discharge end of the elbow, said passage having a portion of the wall of the same detachably held in place, substantially as described. 50

In testimony whereof I affix my signature in presence of two witnesses.

WARREN M. BRINKERHOFF.

Witnesses:

GEORGE C. PEARSON,
IRVING W. SMITH.