

No. 786,196.

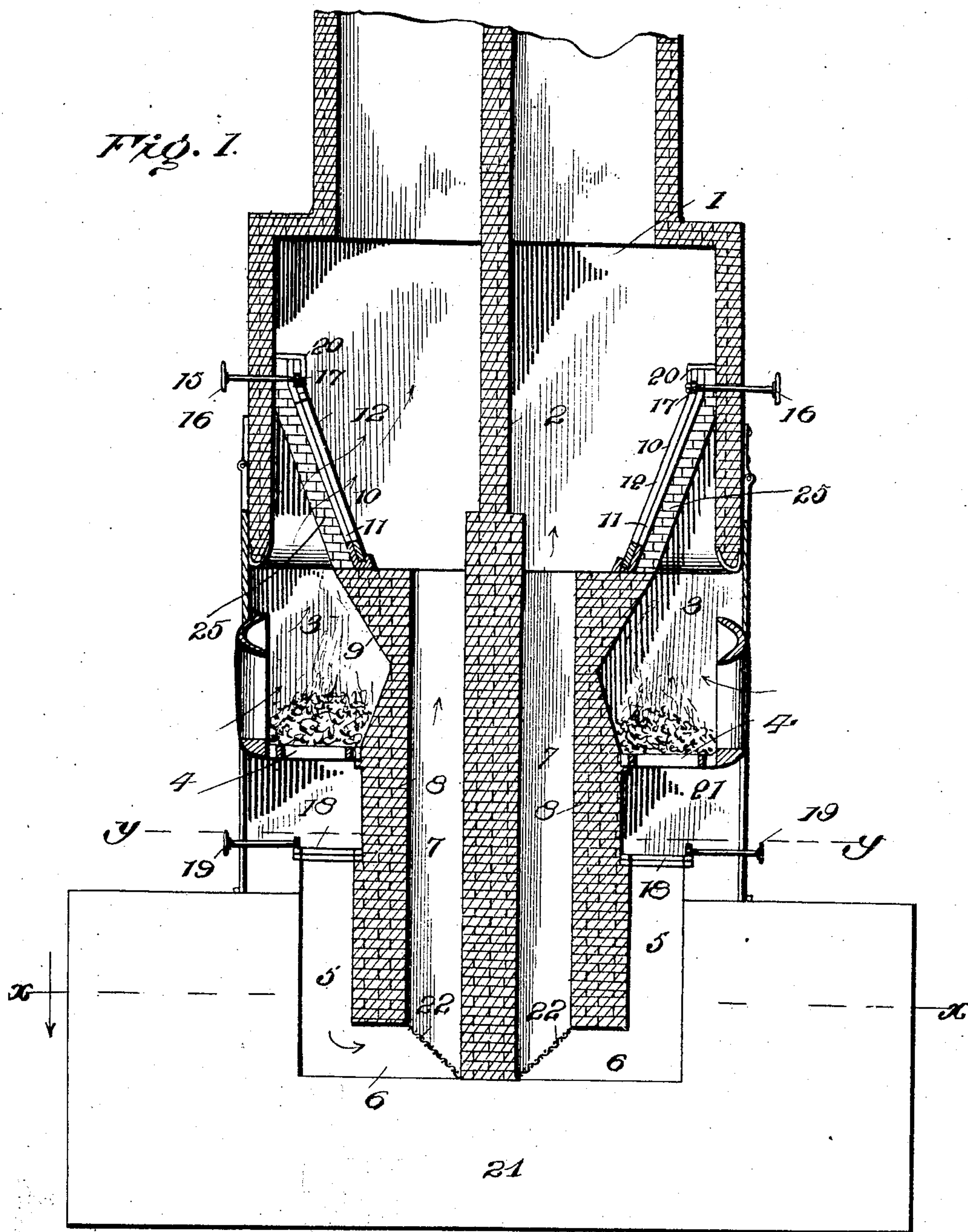
PATENTED MAR. 28, 1905.

W. T. COUGHLIN.
CHIMNEY CONSTRUCTION.

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APPLICATION FILED JUNE 2, 1904.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 2.

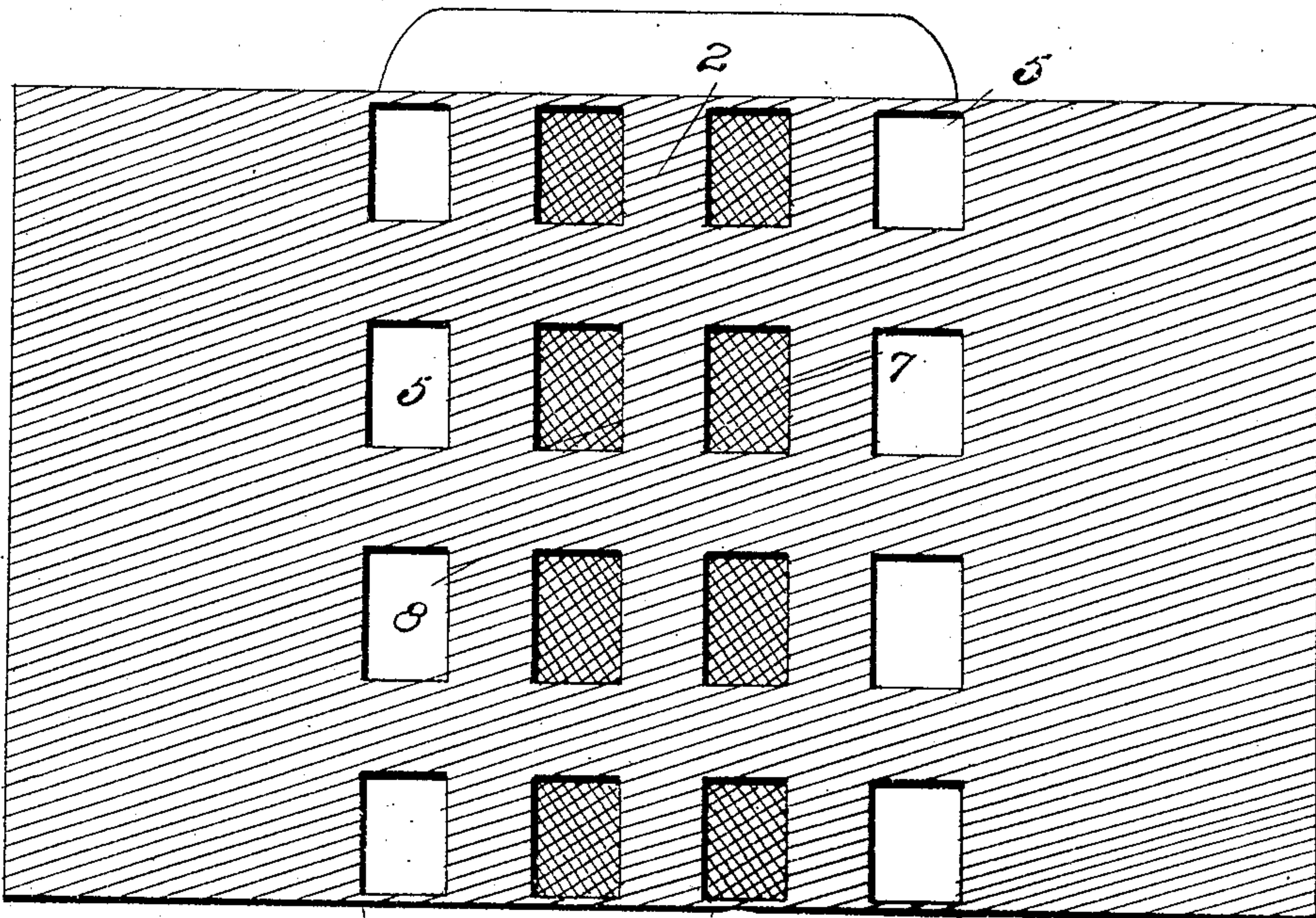


Fig. 3.

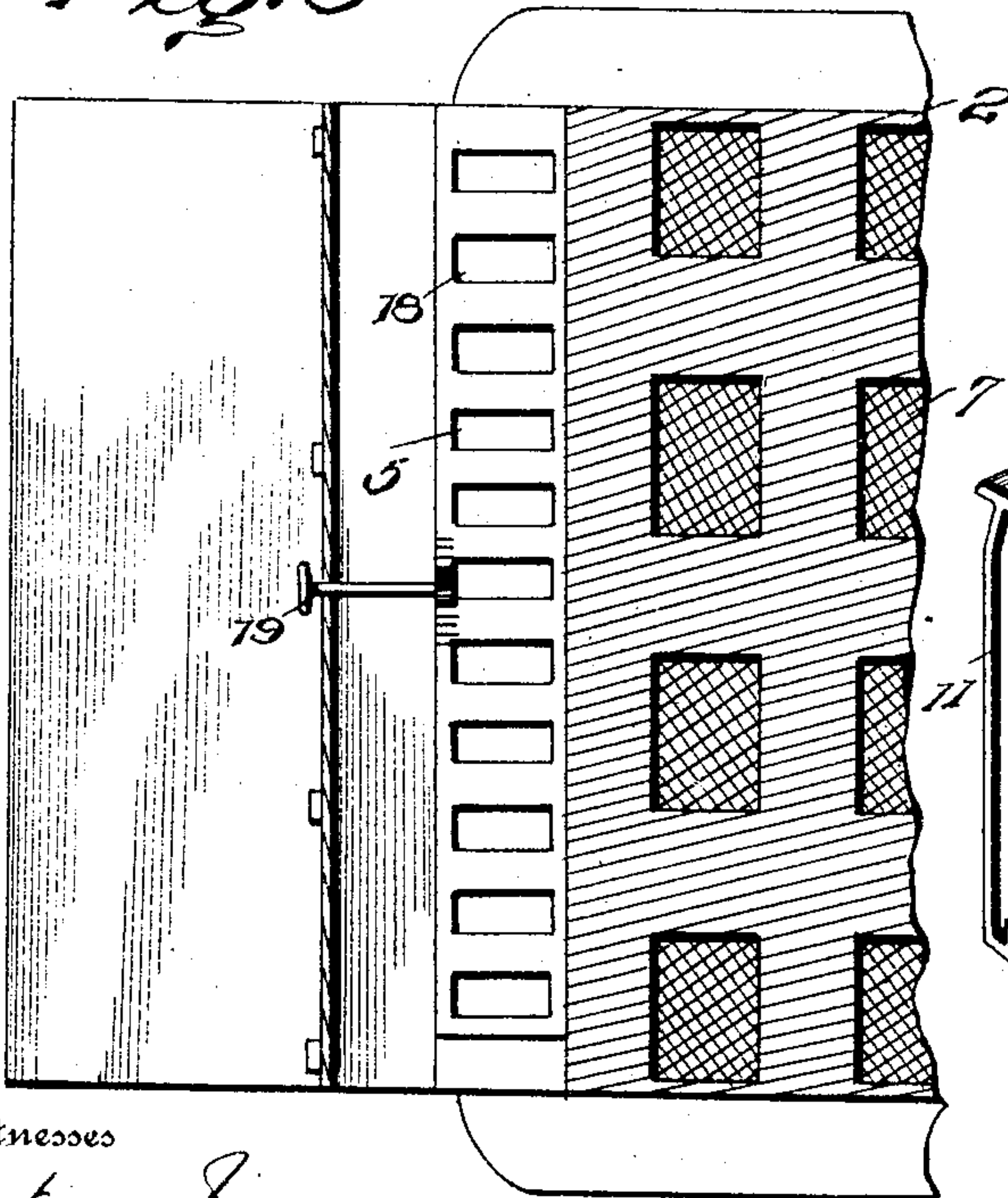
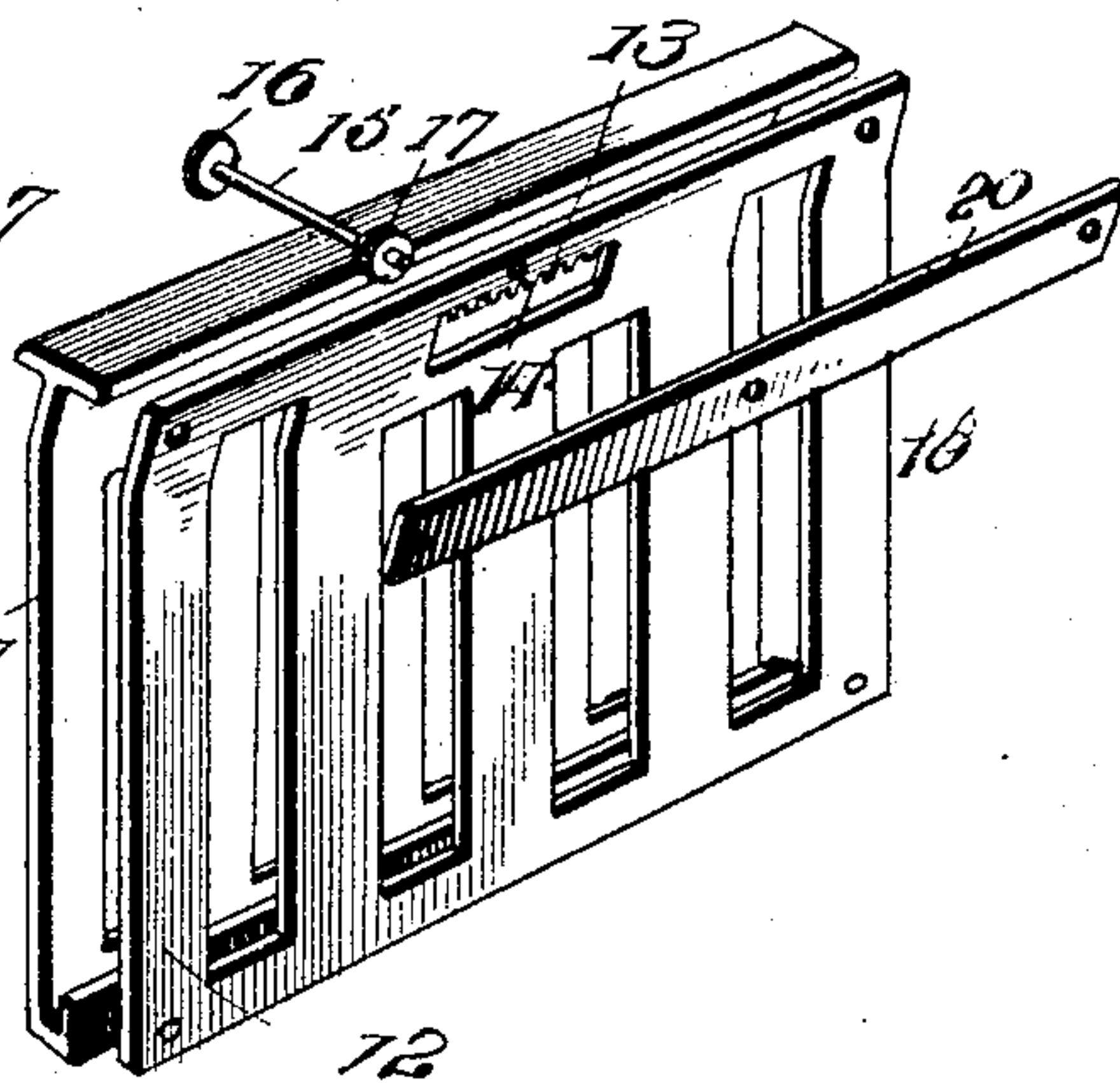


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CHIMNEY CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 786,196, dated March 28, 1905.

Application filed June 2, 1904. Serial No. 210,882.

To all whom it may concern:

Be it known that I, WILLIAM T. COUGHLIN, a citizen of the United States, residing at Bessemer, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Chimney Constructions, of which the following is a specification.

My invention relates to a special construction of chimney which is particularly adapted for use in connection with open-fireplace heaters and which is designed to greatly increase the heating capacity of the heater and at the same time reduce to a minimum the amount of fuel required to supply the same.

The chimney comprises a peculiar arrangement of flues by which the draft may be directed above or beneath the heater. Damper means are provided to govern the draft above mentioned, so as to attain the advantageous results hereinbefore premised upon.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional view of the invention. Fig. 2 is a horizontal sectional view of the invention taken on the line X X of Fig. 1. Fig. 3 is a horizontal sectional view of the invention taken on the line Y Y of Fig. 1. Fig. 4 is a perspective view showing more clearly the construction of the damper means utilized in connection with my invention.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

In the drawings a double-chimney structure is illustrated, the chimneys being represented by the numeral 1. The chimneys are separated by means of the intermediate or party-wall 2, as shown most clearly in the drawings, and since each chimney is of the same form one only will be described here-

in. The heater illustrated is of the ordinary open-fireplace type, the combustion-chamber thereof being represented at 3. The heater is provided with the grate 4, which is substantially mounted in position, and downwardly extended from the grate 4 are a plurality of vertical downdraft-flues 5. The flues 5 extend rearwardly at the lower ends, as indicated at 6, merging into vertical updraft-flues 7. The updraft-flue 7 merges into the chimney 1 at a point above the combustion-chamber 3 of the heater and the flues 7 are separated from the flues 5 by means of a transverse vertical partition-wall 8. The wall 8 forms a fireback for the heater, being cut away at the upper portion thereof adjacent the combustion-chamber 3, the cut-away portion aforesaid being designated 9. The chimney 1 extends over the heater, for which it is constructed and is designed to admit of the passage off of the products of combustion, as will be noted by reference to Fig. 1 of the drawings. Further, the disposal of the chimney relative to the heater is such as to admit of a direct upward draft above the combustion-chamber 3 through the chimney when this is desired, and a damper 10 is located immediately above the heater, resting upon the adjacent partition-wall 8 and against the front wall of the chimney 1. The damper 10 comprises a fixed damper-plate 11 and a movable damper-plate 12. The damper-plate 12 is slidably mounted and is provided at its upper portion with an elongated slot 13, toothed upon its upper side, as shown at 14. The plate 12 is actuated by means of a shaft 15, provided at its outer end with a handle 16 and at its inner end with a pinion 17. The pinion 17 operates in the elongated slot 13 of the movable damper-plate 12 and coöperates with the toothed portion 14 of the slot aforesaid, so as to effect a shifting movement of the plate 12 to open or close the damper. The shaft 15 is mounted in the front wall of the damper 1, and the handle 16 is located in a convenient situation for operation of the damper. When the damper 10 is open, a direct draft is had above the combustion-chamber 3 and the grate 4, as will be readily comprehended. However, it is desirable at

times to produce a downdraft under the grate 4, and for this purpose the damper 10 may be closed, and a second damper, 18, located below the grate 4, is adapted to be opened, so as to secure the downdraft through the flues 5 and up the flues 7. The damper 18 may be operated by a suitable handle 19, and this damper may be of any suitable type adapted for the purposes of my invention. When an updraft is desirable, the damper 10 would of course be opened by operating the handle 16 of the shaft 15 and the lower damper 18 would be closed. A plate 20 is secured to the movable damper-plate 12, at the upper portion thereof, and this plate 20 extends over the slot 13 of the plate 12, thus housing the pinion 17 therein.

It is contemplated in the embodiment of my invention to admit of displacement of the ashes of the heater into an adjacent ash-pit 21. The ash-pit 21 is common to both chimneys, and ashes dumped from the grate 4 are adapted to pass into the ash-pit 21, which latter may be located in the lowermost floor of the building, so as to readily admit of carrying off of the ashes whenever this becomes necessary. In order to prevent any liability of sparks passing through the downdraft-flue 5 and up through the flues 7, leading therefrom, and out of the chimney, a screen 22 is located adjacent the point where the flue 7 leads into the portion 6 of the flue 5, and this screen effectually answers the desired purpose above described, so that no danger of setting fire to adjacent buildings is incurred.

The general construction of my chimney is exceedingly simple, and the arrangement of the heater with reference to the draft-flues is very advantageous in that by proper operation of the dampers either a direct draft through the chimney 1 may be obtained or a downdraft from the combustion-chamber of the heater may be produced, so that a thorough combustion is promoted within the heater, giving rise to material increase in the amount of heat when the same or a less quantity of fuel is used.

It will be understood that the front of the heater may be suitably closed by the usual means. In order that the damper-plates 12 may be protected from the heat of the combustion-chamber below, especially when the

updraft-dampers are open, spaced fire-brick partitions 25 are disposed at the outer sides of said damper-plates, the partitions 25 extending upwardly from the adjacent partition-walls 8 and outwardly to the front of the chimney-walls, as shown most clearly in Fig. 1.

Having thus described the invention, what is claimed as new is—

1. In chimney construction, and in combination, a heater, a chimney extending upwardly from the heater, a transverse partition-wall disposed in rear of the heater, vertical downdraft-flues extending downwardly from beneath the heater in front of the partition-wall aforesaid, vertical updraft-flues extending from the downdraft-flues aforesaid and located in rear of the partition-wall above mentioned, a damper resting at its lower end upon the upper portion of the partition-wall and having the upper end resting against the front wall of the chimney, said damper being disposed above the heater and adapted to establish or cut off a direct draft therefrom, spaced fire-brick partitions beneath the said damper, and a second damper disposed beneath the heater to establish or cut off a downdraft therefrom.

2. In chimney construction, the combination of the heater 3, the chimney 1 extending upwardly from the heater 3, the vertical downdraft-flue 5 extending from beneath the heater 3 and extending rearwardly at its lower end at 6, the damper 18 at the upper end of the flue 5, the vertical updraft-flue 7 extending from the portion 6 of the flue 5, the vertical partition-wall 8 separating the flues 5 and 7 and forming a fireback for the heater 3, the spaced fire-brick partitions 25 projected upwardly from the upper portion of the partition 8 to the front wall of the chimney 1, the damper 10 above the fire-brick partitions 25, and the ash-pit 21 situated below the portion 6 of the flues 5 and communicating with the space immediately under the heater.

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

WILLIAM T. COUGHLIN. [L. S.]

Witnesses:

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J. H. JOHNSON.