

No. 869,763.

PATENTED OCT. 29, 1907.

W. O. AMSLER.
CHIMNEY VALVE CONSTRUCTION.

APPLICATION FILED JAN. 25, 1906.

3 SHEETS—SHEET 1.

FIG. 1.

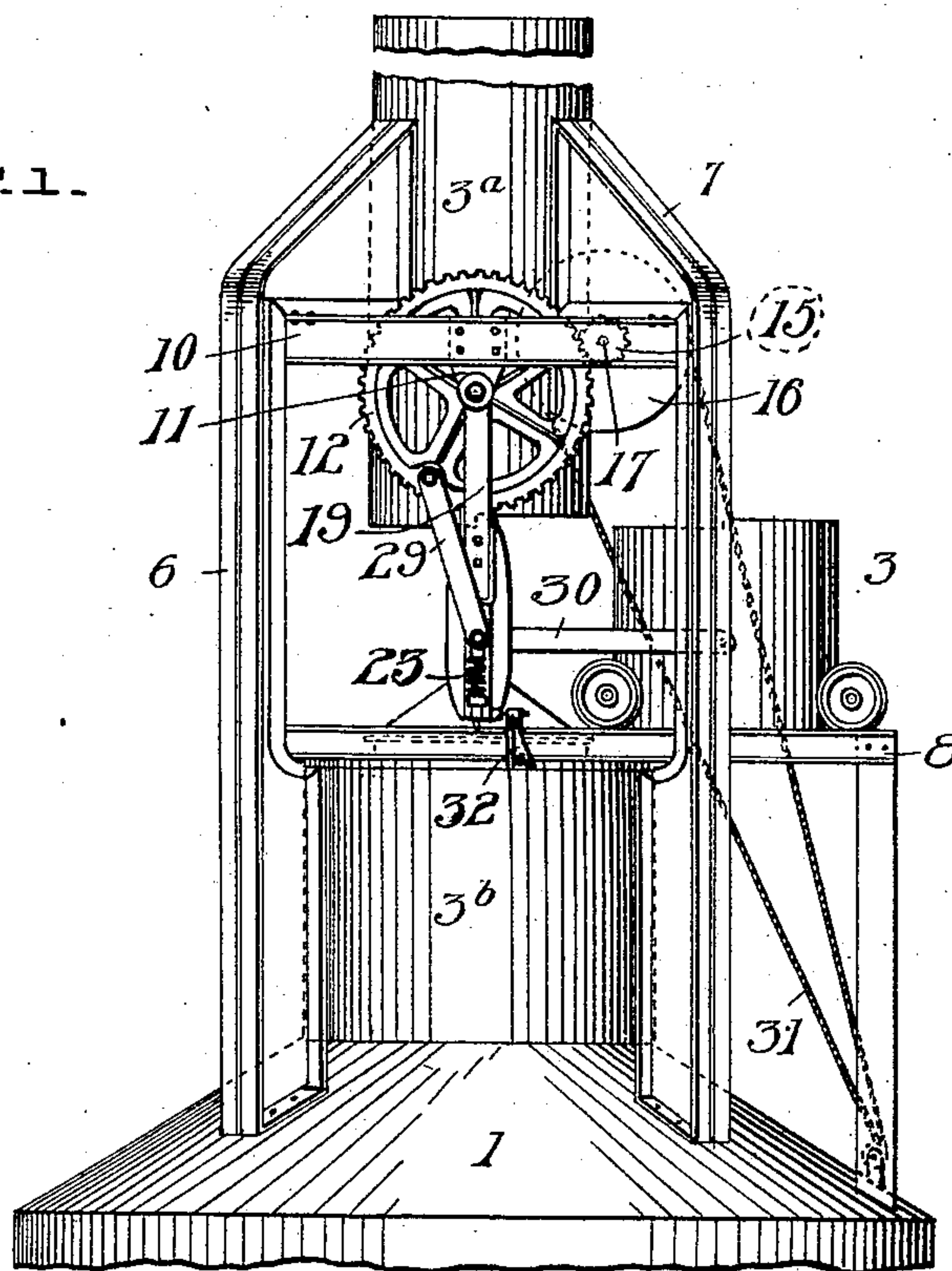
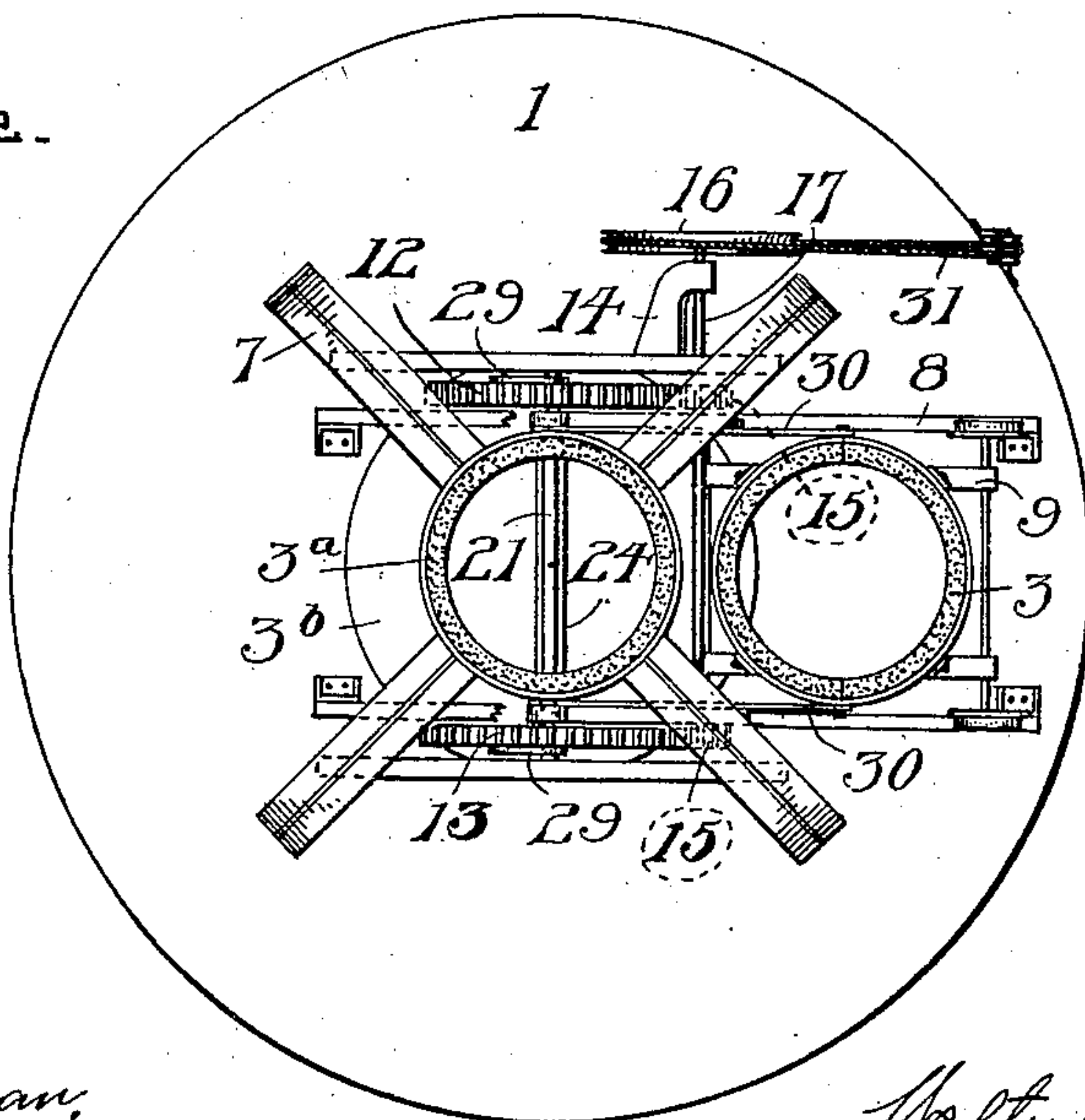


FIG. 2.



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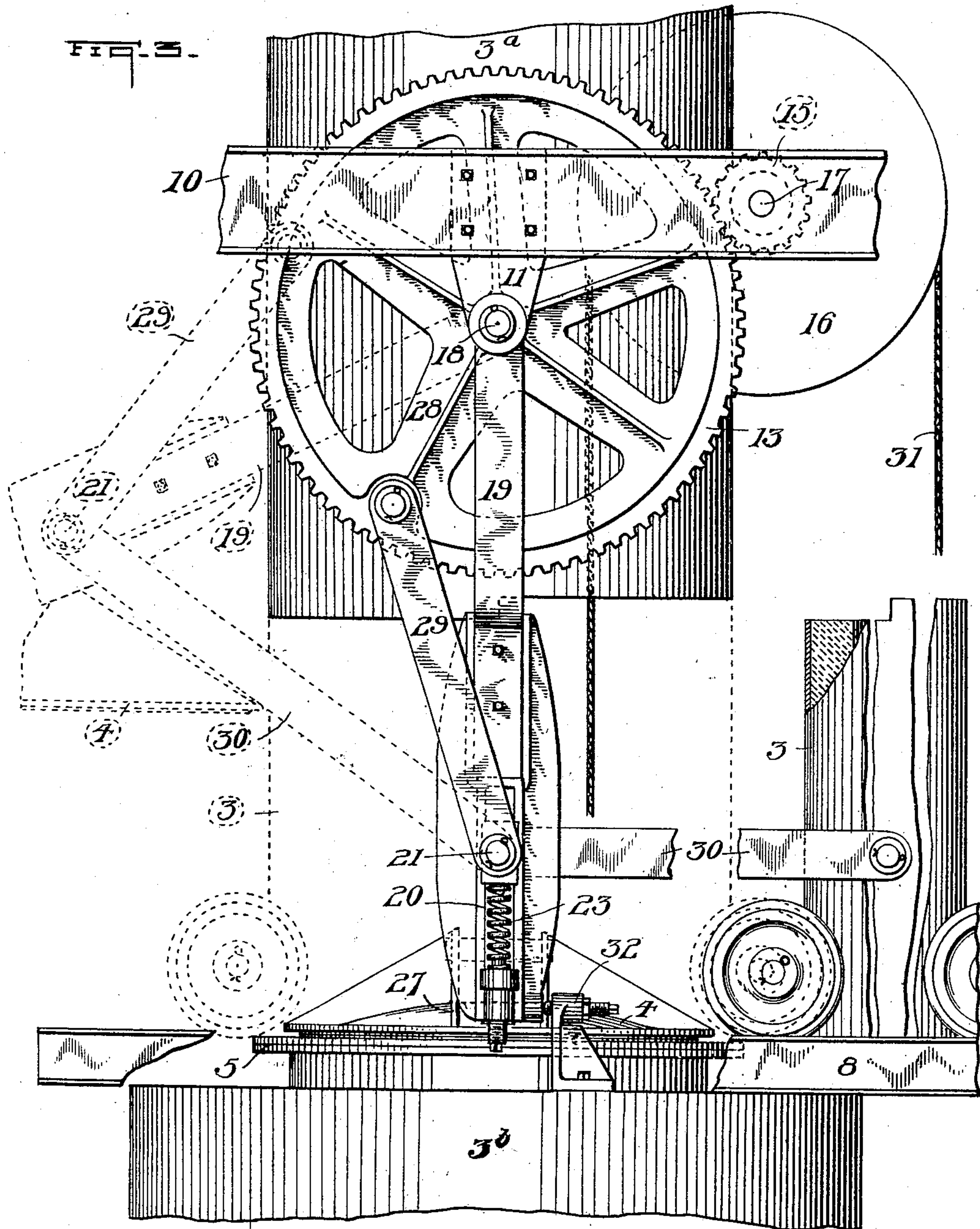
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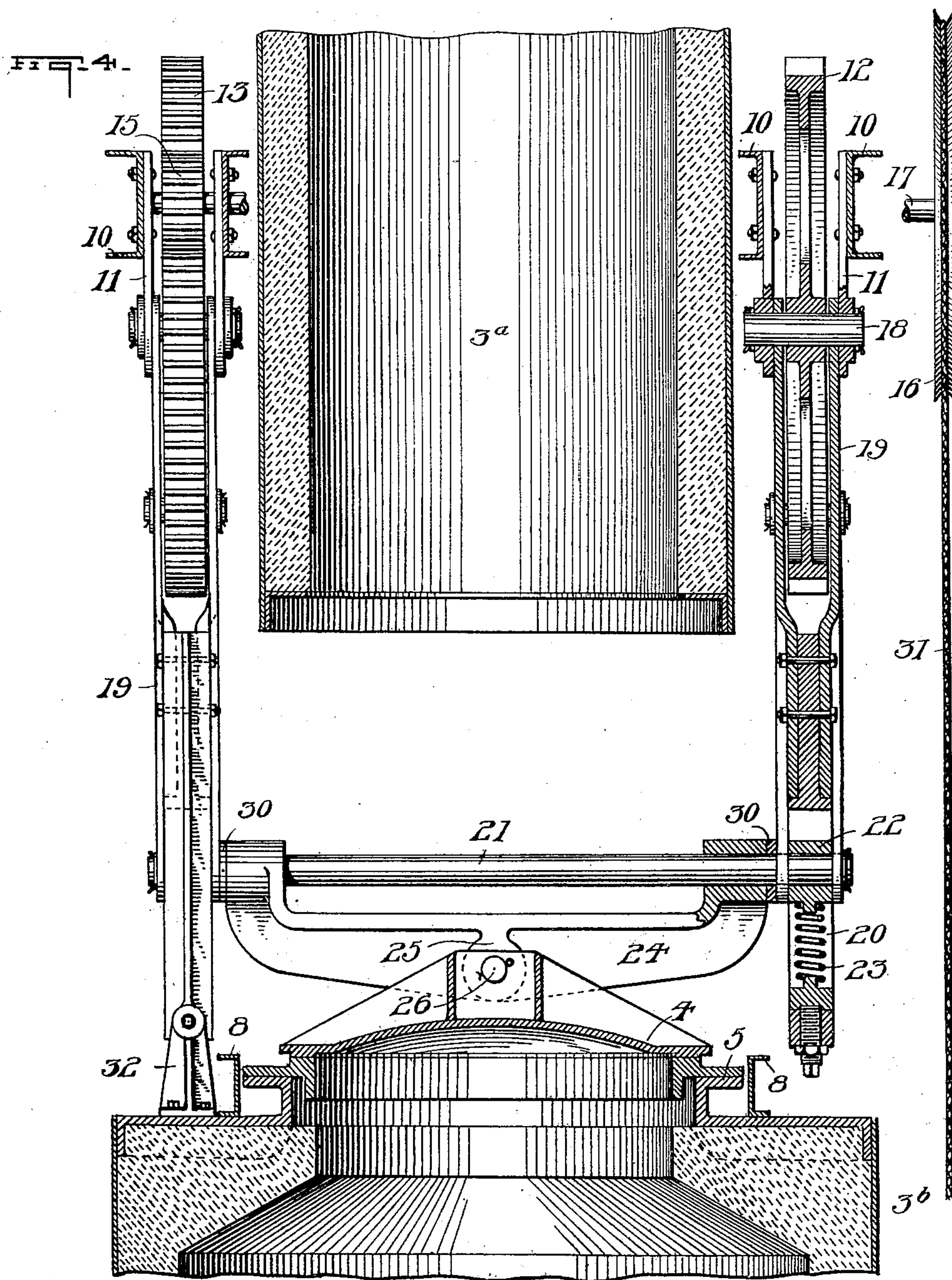
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3 SHEETS—SHEET 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WALTER O. AMSLER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE AMSLER ENGINEERING COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CHIMNEY-VALVE CONSTRUCTION.

No. 869,763.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed January 25, 1906. Serial No. 297,895.

To all whom it may concern:

Be it known that I, WALTER O. AMSLER, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented
5 new and useful Improvements in Chimney-Valve Construction, of which the following is a specification.

The object of my invention is to provide a new and improved chimney-valve construction for hot-blast stoves.

10 As heretofore constructed, chimney-valves for hot-blast stoves have been the cause of considerable trouble in the operation of the stoves. This trouble is chiefly due to leaks occurring between the chimney-valve and its seat, thereby permitting a considerable quantity of
15 the cold-blast to escape to the chimney-flue. The leaks mentioned, under prior constructions, are difficult to detect, and also very hard to repair on account of the inaccessibility of the valve. In the present invention I am enabled to obviate the troubles referred to by
20 providing a chimney-valve construction, in which any leaks may be readily detected, and in which the parts are accessible for the purposes of repairs.

In the accompanying drawings, which illustrate an application of my invention; Figure 1 is a side elevational view of a portion of the roof and the chimney-flue of a hot-blast stove showing my invention; Fig. 2, a
25 plan; Fig. 3 an enlarged detail view in side elevation; and Fig. 4, a part sectional view and a part end view.

Referring to the drawings, 1 represents the roof of a
30 hot-blast stove having its chimney-flue located at the top of the stove. My invention however, may be employed in connection with a stove having the chimney-flue located at or near the bottom, but as the essential features of my invention are employed whether the
35 stove has its chimney-flue located at either the top or bottom, I have deemed it unnecessary to show an application of my construction to a stove of the latter class.

As shown, I form the chimney-flue with a movable-
40 section 3, and provide means for moving said section 3 into and out of register with the other portions of the chimney-flue. The chimney-valve 4 is arranged to be raised from its seat 5 and also to be moved outside of the chimney-flue. As shown by the draw-
45 ings, it is designed, when the stove is being heated, to have the chimney-valve outside of and free of the chimney-flue and the movable-flue-section in register with the other portions of the chimney-flue, thereby forming a free and uninterrupted passage through said
50 flue. During the admission of the cold-blast to the stove movable flue-section 3, is out of register with the other portions of the chimney-flue and the chimney-valve 4 is in operative position on its seat 5. I desire to call particular attention to the fact that while the

valve is seated, as just described, it may be inspected 55 and any leaks that may occur are easily seen.

The fixed upper section 3^a of the chimney-flue is supported by suitable frame-work comprising vertical-
members 6 having inwardly extending arms 7. Mem-
bers 6, as illustrated, rest on the roof of the stove but 60 they may, if desired, be attached to the lower fixed portion 3^b of the chimney-flue.

Extending laterally of the frame-work mentioned is a track 8, this track is designed to support a carriage 9
arranged to be moved on said track and to carry the 65 movable-flue-section 3 into and out of register with the other portions of the chimney-flue. Located on opposite sides of the chimney-flue are channel-bars 10, 10, and these channels carry supporting-members 11, 11, which members in turn support gear-wheels 12 and 13. 70 Supported by bracket 14 at one end, and carrying pinion-wheels 15, 15, and a sheave 16, is a shaft 17. One of the pinions 15 meshes with gear-wheel 12 and the other with wheel 13. Supporting-members 11, 11 are provided with suitable bearings for the axles 18 of gear-
wheels 12 and 13, and 19, 19 designate connecting arms 75 joining members 11, 11, with slotted hangers 20, 20. Located in the slots of hangers 20 is a cross-bar 21; the bearings 22 of which rest upon springs 23. Chimney-valve 4 is supported from cross-rod 21 by a rocking
80 joint-connection comprising hanger 24 provided with a ball 25, and a pin 26, which latter extends through projections 27 formed on the valve.

Each of the gear-wheels 12 and 13 is connected with
rod 21 by means of a toggle-joint connection comprising 85 a spoke 28 and arm 29. I desire to call particular attention to this toggle-connection as this construction provides means whereby considerable downward pressure may be brought against the valve for the purpose of
properly seating the valve on its seat against the pres- 90 sure of the flue. The movable flue-section is also connected with rod 21 by arms 30 and said section is moved into and out of register with the other portions of said chimney-flue by moving rod 21.

An operating cable 31 extends over sheave 16 to a 95 convenient point in reach of an operator.

Assuming the valve to be in its operative position, as shown by full lines in Fig. 3, and the movable flue-section to be out of register with the chimney-flue proper; the valve is raised from its seat by turning the
100 gear-wheels. Turning the gear-wheels first causes the downward pressure of the toggle construction against the valve to be lessened, after which the springs 23 raise cross-arm 21 and the valve 4 a sufficient distance to free the valve of its seat. A continued movement of
105 the gear-wheels causes the parts to assume the positions indicated by the dotted lines; that is to say, the valve is raised and carried outside of the chimney-flue and

the movable-flue-section brought into register with the fixed flue-portions. When it is desired to again introduce the cold-blast to the stove, the gear-wheels are moved in an opposite direction from that just described, and this movement will cause the movable-flue-section to travel outwardly from the chimney-flue and the valve to be carried over and forced down upon its seat. For the purpose of limiting the inward movement of the valve, I have provided a stop 32.

10 What I claim is;—

1. A chimney-valve construction for hot-blast stoves comprising a chimney-flue having a movable section, a disk-valve adapted to retain the pressure in the flue, and means for moving the section and the valve into and out of operative positions.

2. A chimney-valve construction for hot-blast stoves comprising a chimney-flue, a movable-flue-section, a disk-chimney-valve adapted to retain the pressure in the flue, and means for moving the section out of its operative position and the valve into its operative position and vice-versa.

3. A chimney-valve construction for hot-blast stoves comprising a chimney-flue, a movable-flue-section, a disk-chimney-valve adapted to retain the pressure in the flue, and means for simultaneously moving the section out of its operative position and the valve into its operative position and vice-versa.

4. A chimney-valve construction for hot-blast stoves comprising a chimney-flue, a movable-flue-section, a chimney-valve adapted to retain the pressure in the flue, a system of gearing, means connecting the gearing and the valve for moving the valve into and out of operative position, and means connected with the gearing whereby the flue-section is moved into and out of operative position.

5. A chimney-valve construction for hot-blast stoves comprising a chimney-flue, a movable-flue-section, a carrier for the flue-section, a chimney-valve, a system of gearing, means connecting the valve and gearing for moving

the valve into and out of operative position, and means connecting the gearing and the carrier whereby the flue-section is moved into and out of operative position.

6. A chimney-valve construction for hot-blast stoves comprising a chimney-flue, a movable-flue-section, a carrier for the movable-flue-section, a chimney-valve adapted to retain the pressure in the flue, a system of gearing, a toggle-joint construction connecting the gearing and valve.

7. A chimney-valve construction for hot-blast stoves comprising a chimney-flue, a movable-flue-section, a valve adapted to retain the pressure in the flue, means for moving the flue-section and valve into and out of operative positions, and a toggle mechanism for seating the valve.

8. A chimney-valve construction for hot-blast stoves comprising a chimney-flue, a chimney-valve, and a toggle mechanism arranged to exert a pressure upon the valve to force the valve to its seat against the pressure in the flue.

9. A chimney-valve construction for hot-blast stoves comprising a chimney-flue, a chimney-valve, a cross-bar for supporting the valve, and a toggle-mechanism connected with the cross-bar adapted to move the valve and arranged to exert a pressure upon the valve to force it against its seat.

10. A chimney-valve construction for hot-blast stoves comprising a chimney-flue, a chimney-valve, a cross-bar, spring-bearings for the cross-bar, a toggle-mechanism connected with the cross-bar, and means for actuating the toggle-mechanism to move the valve.

11. A chimney-valve construction for hot-blast stoves comprising a chimney-flue constructed with a movable section, a chimney-valve adapted to retain the pressure in the flue, a cross-bar supporting the valve, a connection between the cross-bar and the movable flue-section, and means comprising a toggle-mechanism for moving the valve and movable flue-section.

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

WALTER O. AMSLER.

Witnesses:

W. G. DOOLITTLE,
MARGARET HUGHES.