No. 731,452. PATENTED JUNE 23, 1903.

G. K. HAMFELDT.

AIR VALVE FOR HOT BLAST STOVES.

APPLICATION FILED JULY 21, 1902.

NO MODEL.

Fig. 1.

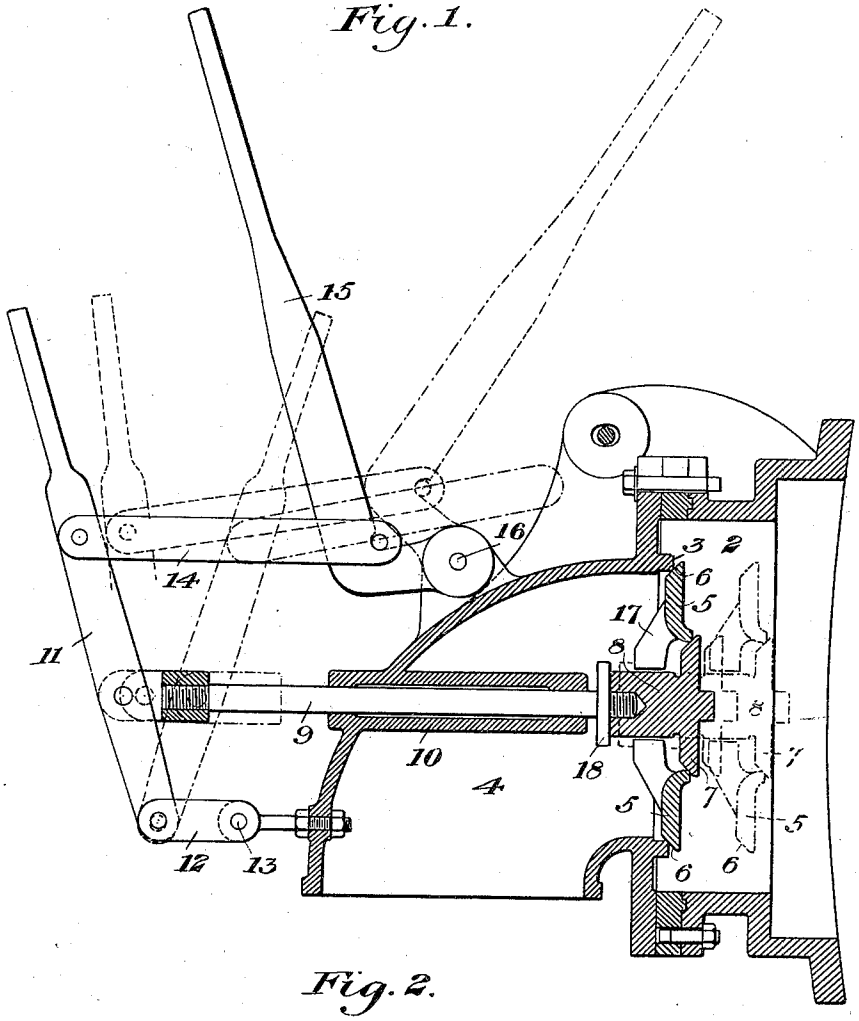
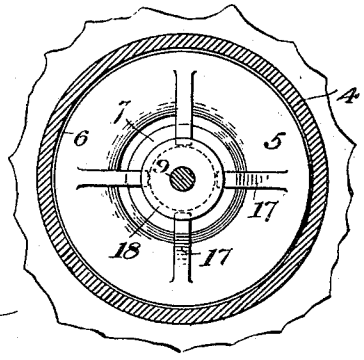


Fig. 2.



WITNESSES

INVENTOR

G. K. Hamfeldt

by Baldwin & Byrne

his Attys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 731,452. Patented June 23, 1903.

UNITED STATES PATENT OFFICE.

GEORGE K. HAMFELDT, OF MUNHALL, PENNSYLVANIA.

AIR-VALVE FOR HOT-BLAST STOVES.

SPECIFICATION forming part of Letters Patent No. 731,452, dated June 23, 1903.

Application filed July 21, 1902. Serial No. 116,345. (No model.)

To all whom it may concern:

Be it known that I, GEORGE K. HAMFELDT, of Munhall, Allegheny county, Pennsylvania, have invented a new and useful Air-Valve for Hot-Blast Stoves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a sectional top plan view of my improved valve and attachments, and Fig. 2 is an outer face view of the valve proper.

My invention relates to the class of air-valves for hot-blast stoves, and is designed to improve the construction of such valves and render them easier to open. Heretofore such air-valves have been made of one piece, and as the pressure in the stove is considerable at the time that it is desired to open the valve it is difficult to force the valve inwardly to open it against such pressure. My invention overcomes this difficulty; and it consists in making such valves in a plurality of parts, which are moved successively, so that the area of pressure which is acted against at any one period is greatly reduced and the opening of the valve thus made easy.

It further consists in arranging the valve so that after one part opens a certain distance it will actuate another part, thus successively moving the parts until the valve is entirely opened.

In the drawings, 2 represents the valve-casing, which is secured to the side of the hot-blast stove, this casing containing a seat 3 and an outer curved extension or outlet portion 4.

The valve consists of an annulus 5, having a beveled edge portion 6, arranged to seat upon the inner end of the valve-seat 3, this annulus containing a central valve portion 7, having a similarly-beveled edge, which seats outwardly against the inner edge of the annulus. The valve portion 7 is provided with a hub 8, to which is secured a stem 9, extending through guide 10 and pivotally connected to a lever 11. The lever 11 has a link connection 12 at the lower end pivoted at 13, and I have shown this lever as connected by ilnk 14 with a bent lever 15, pivoted at 16. This gives a multiplying-lever arrangement, which may or may not be used, as desired, though I prefer to employ it.

The annulus 5 is provided with outer inwardly-projecting ribs 17, which surround the hub 8 of the valve portions 7 and are arranged to be engaged by a ring portion 18 on the stem after the valve portion 7 has been forced in a predetermined distance.

In operating the valve, which seats outwardly, the levers are swung from the position shown in full lines to that illustrated in dotted lines. During the first part of this movement the inner valve portion 7 was forced in against the pressure, and as it opens the pressure becomes reduced and on further movement the projecting portion 18 engages the arms of the annulus and forces it in, thus opening the entire area of the valve.

The advantages of my invention result from the making of the valve in a plurality of parts, one part being opened in advance of the other, so that the power required is greatly reduced.

Many variations may be made in the form and arrangement of the valve and in the mechanism for opening it without departing from my invention.

I claim—

1. A hot-blast stove having connections arranged to create an air-pressure therein, said stove having in its side an inwardly-opening puppet air-valve formed of a plurality of parts, and hand-controlled mechanism arranged to force said parts inwardly one after the other against the air-pressure; substantially as described.

2. A hot-blast stove having an inwardly-opening puppet air-valve formed of a plurality of concentric divided portions, and hand-controlled mechanism for forcing one portion inwardly and thereafter forcing in the other portion; substantially as described.

3. A hot-blast stove having an inwardly-opening puppet air-valve composed of a plurality of concentric divided parts, a stem con-

nected to one part and having hand operating mechanism, and projections arranged to force another part inwardly after the first part has moved a predetermined distance; substantially as described.

4. A hot-blast stove having an air-valve formed of a plurality of divided parts arranged to open successively, and a multiplying-lever device connected thereto; substantially as described.

In testimony whereof I have hereunto set my hand.

GEORGE K. HAMFELDT.

Witnesses:
C. P. BYRNES,
H. M. CORWIN.