

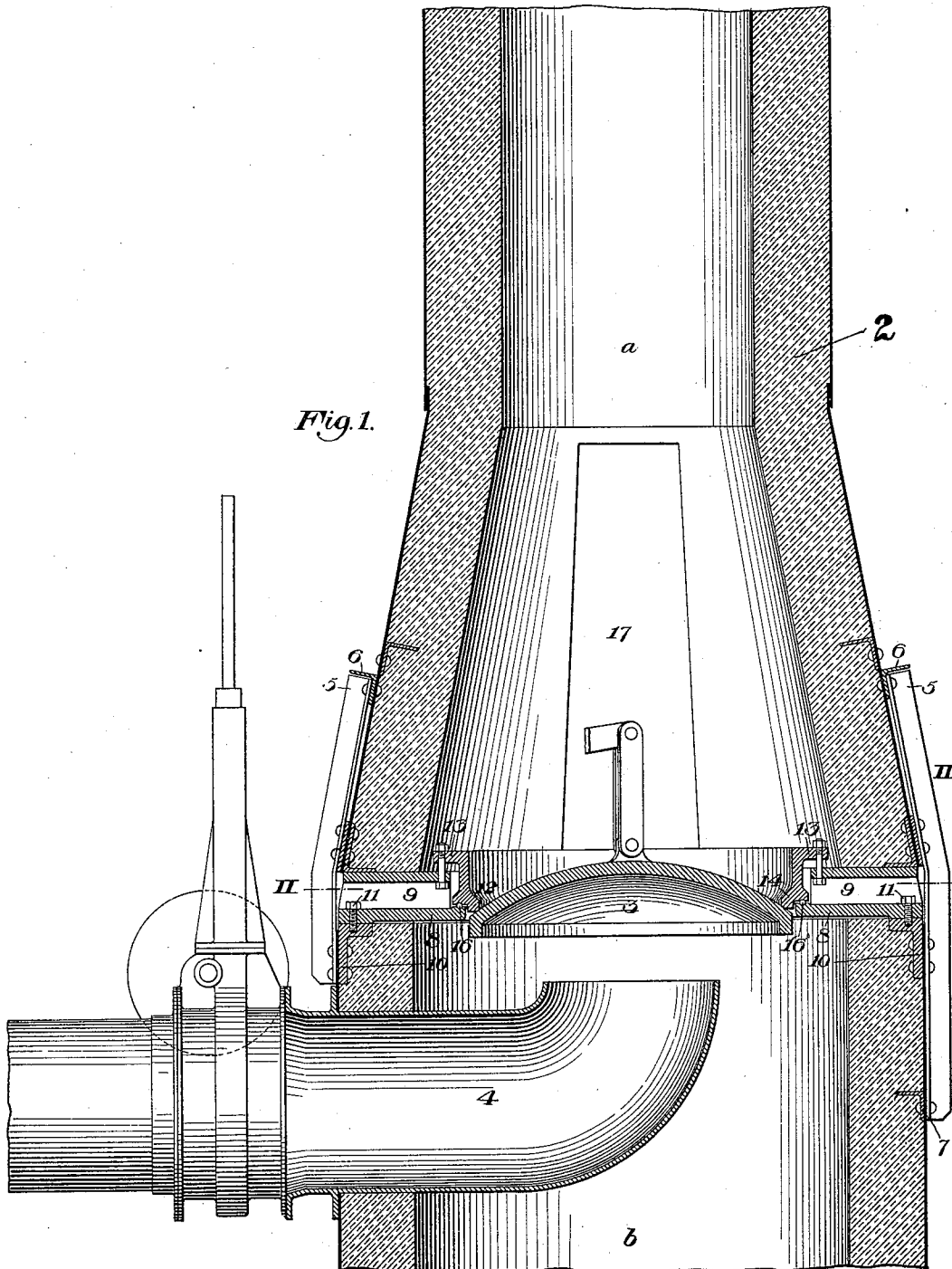
(No Model.)

2 Sheets—Sheet 1.

J. R. SPEER.
FURNACE VALVE.

No. 594,662.

Patented Nov. 30, 1897.



WITNESSES

Henry A Otto
E. W. Cunningham

INVENTOR

J. Ramsey Speer

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

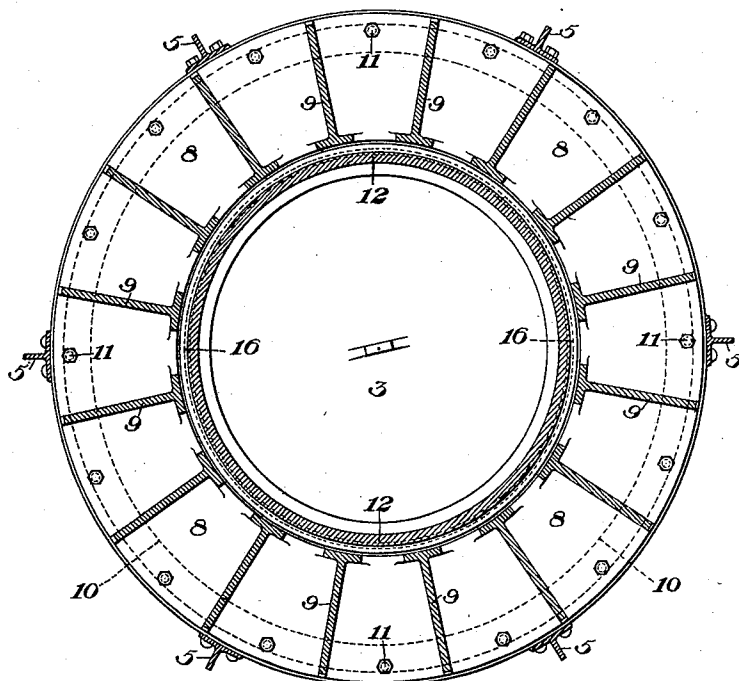
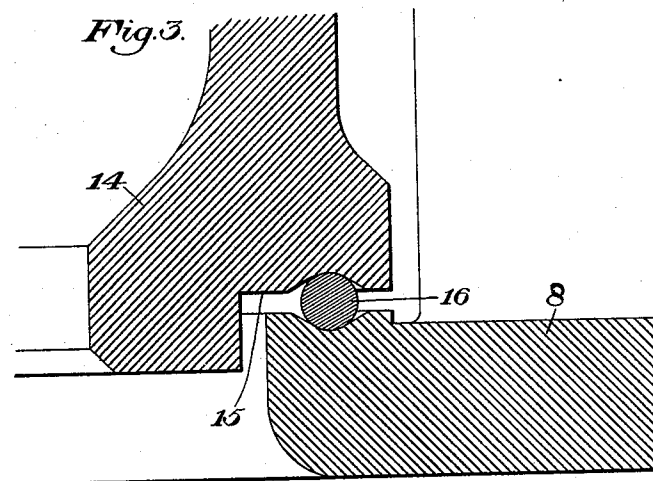


Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES RAMSEY SPEER, OF PITTSBURG, PENNSYLVANIA.

FURNACE-VALVE.

SPECIFICATION forming part of Letters Patent No. 594,662, dated November 30, 1897.

Application filed February 15, 1897. Serial No. 623,378. (No model.)

To all whom it may concern:

Be it known that I, JAMES RAMSEY SPEER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Furnace-Valves, 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 vertical section of the chimney of a hot-blast stove provided with my improved valve-seat. Fig. 2 is a horizontal cross-section on the line II II of Fig. 1, and Fig. 3 is an enlarged detail showing the joint between the seat-rim and the seat.

My invention relates to that class of furnace-valves which are employed in chimneys and conduits of hot-blast stoves; and it is designed to provide a valve-seat for such uses which shall be gas and air tight and shall be capable of easy removal for repairs or the insertion of a new seat.

In the drawings, in which similar numerals indicate corresponding parts, 2 indicates the chimney of a hot-blast stove, 3 the vertically-movable valve therein, and 4 the blast-pipe leading into the stack below said valve. The stack is made in two separate sections, an upper section *a* and a lower section *b*, the upper section being sustained by a series of vertically-extending T-irons 5, a part of which are riveted to annular angle-irons 6 7, secured to the upper and lower sections, respectively. The remaining T-irons upon one side of the stack are secured to the angle-irons by cap-bolts, so that they may be removed to allow the pulling out of the valve-seat ring. Thus in the particular form shown in the drawings I employ six of these T-irons, two of which upon one side of the stack are secured by cap-bolts, as shown in Fig. 2. The valve-seat ring 8 is inserted between the upper and lower sections of the stack, this seat-ring consisting of upper and lower annular plates connected by a series of radially-arranged vertical webs or partitions 9, the lower plate of the ring projecting inwardly farther than the upper plate and being secured to the facing-ring 10 of the lower section by a series of cap-bolts 11. The seat itself consists of an an-

nular ring 12, having at its upper end an outwardly-projecting annular flange 13 by which it is bolted to the upper plate of the sheet-ring, as shown in Fig. 1, this ring having at its lower end an annular enlargement or head 14, the inner edge of which is raised to receive the valve. This head is provided with a recess or jog 15, between which and the inner portion of the lower plate of the sheet-ring is clamped a soft-metal ring 16, which is preferably made of copper and which serves to make a gas-tight seal between the seat and the seat-ring. The seat and seat-ring are preferably provided with registering annular grooves to receive this ring, as shown in Fig. 3, and the bolts passing through the upper portion of the seat serve to plant this ring securely in place. The upper portion of the stack is provided with a door (indicated at 17 in Fig. 1) by which admission may be had to the stack, thus giving access to the seat. The purpose of the space between the upper and lower annular plates of the seat-ring is to permit the passage of a cooling air-current.

When the valve-seat becomes worn or injured, the operator may enter the door in the stack and unbolting the seat from the seat-ring it may be turned on edge and taken out through the door. The angle-irons upon one side of the stack are then removed and, the cap-bolts 11 being taken out, the seat is drawn out bodily at the open side of the stack and a new seat pushed into place, the weight of the upper section of the stack being carried by the remaining permanently-secured T-irons.

The advantages of my invention will be apparent to those skilled in the art, since the valve-seat and seat-ring may be easily and quickly removed and replaced without disturbing or jacking up the stack.

Many variations may be made in the form and arrangements of the parts without departing from my invention, since

I claim—

1. The combination with a stack having two sections, the upper section being supported a distance above the lower section by connecting external members, of a valve-seat ring, arranged to be slid into the space be-

tween the two sections, and a valve-seat removably secured to said seat-ring; substantially as described.

2. The combination with a stack formed
5 in two sections, the upper section being supported above the lower section by external connecting strips or members, a part of which are permanently secured to the sections and others of which are removably secured, of a
10 valve-seat ring arranged to be slid into the

space between the two sections of the stack, while part of the connecting members are removed; substantially as described.

In testimony whereof I have hereunto set my hand.

JAMES RAMSEY SPEER.

Witnesses:

THOMAS W. BAKEWELL,
H. M. CORWIN.