

(No Model.)

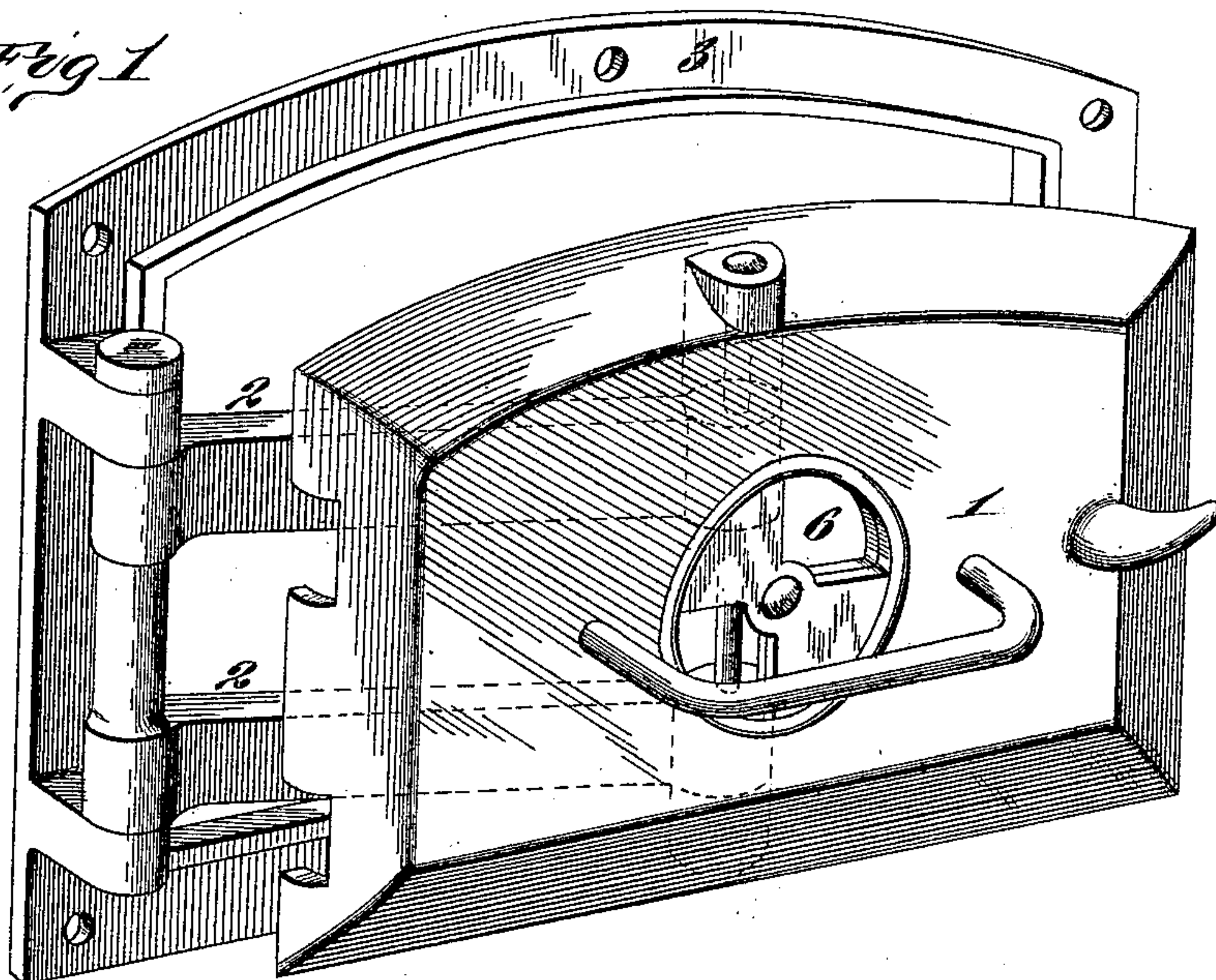
C. K. PICKLES.  
FURNACE DOOR.

2 Sheets—Sheet 1.

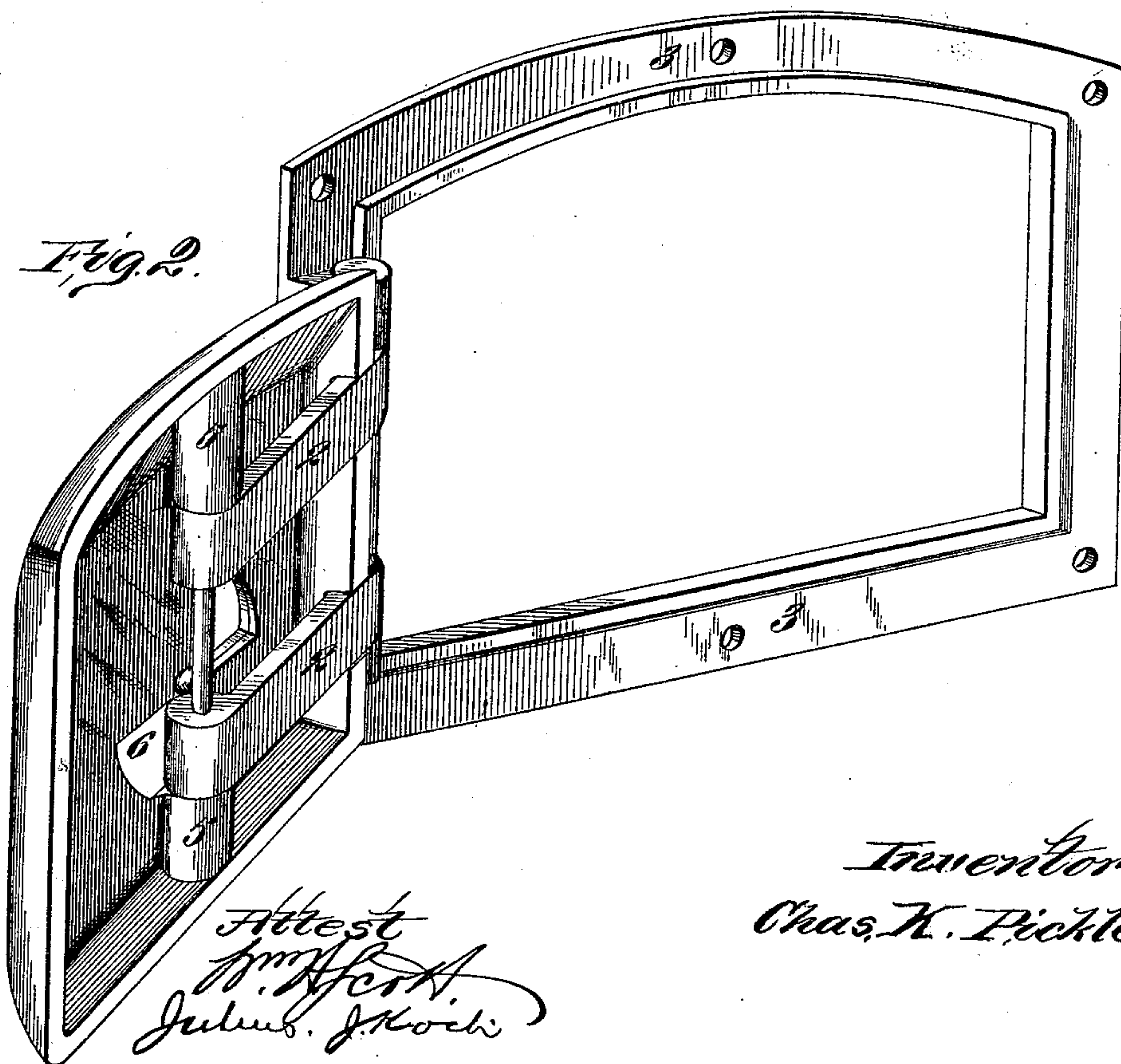
No. 521,447.

Patented June 12, 1894.

*Fig 1*



*Fig 2.*



*Attest*  
*J. H. Koch*  
*Julius J. Koch*

*Inventor:*  
*Chas. K. Pickles*

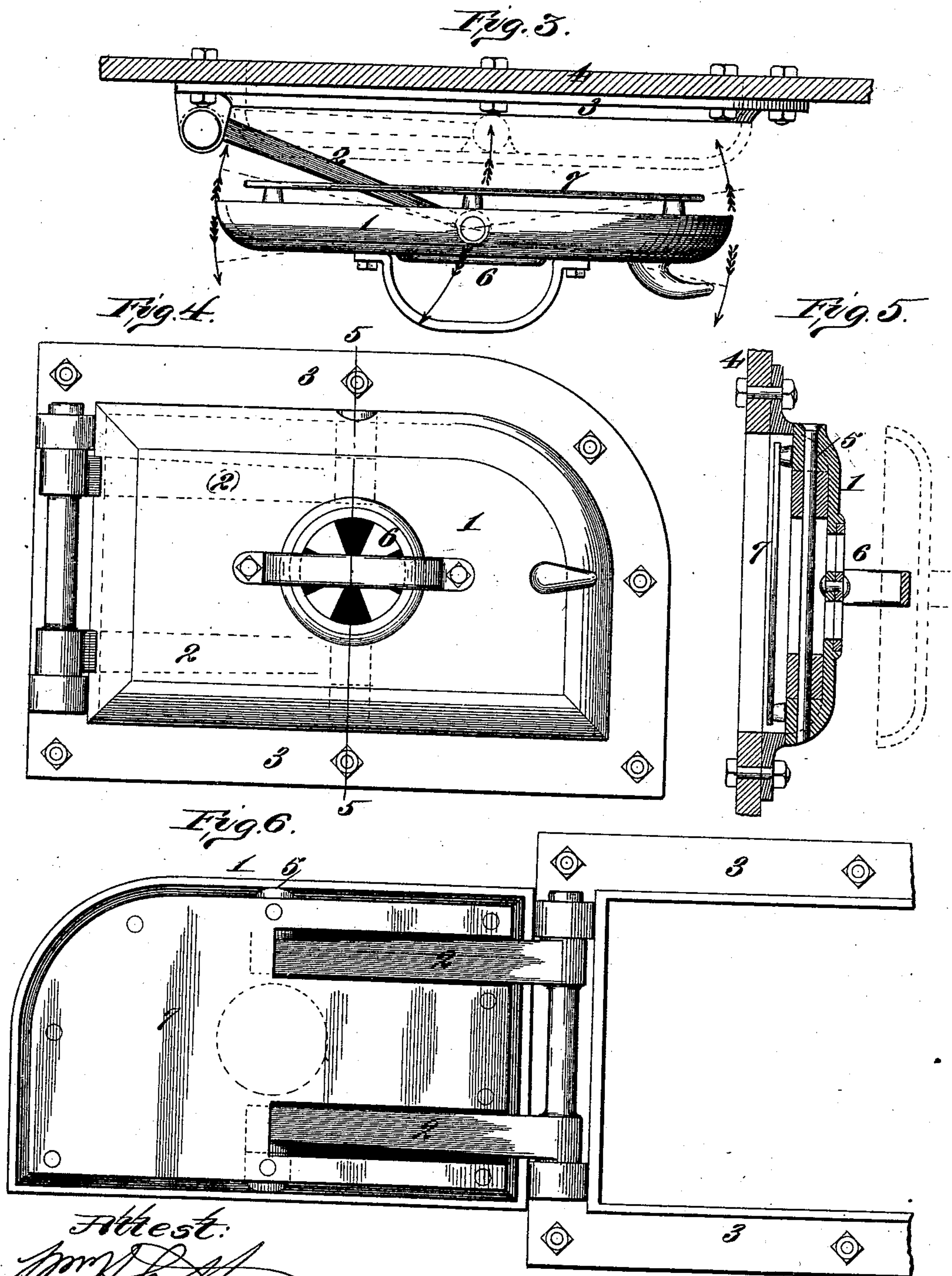
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No. 521,447.

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Attest:  
*Wm. H. Koch*  
Julius J. Koch

Inventor:  
*Chas. K. Pickles.*



# UNITED STATES PATENT OFFICE.

CHARLES K. PICKLES, OF ST. LOUIS, MISSOURI.

## FURNACE-DOOR.

SPECIFICATION forming part of Letters Patent No. 521,447, dated June 12, 1894.

Application filed December 26, 1893. Serial No. 494,769. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES K. PICKLES, a citizen of the United States, residing in the city of St. Louis and State of Missouri, have  
5 invented a certain new and useful Improvement in Draft-Controlling Furnace-Doors, of which the following is a specification.

My invention relates to furnace doors, and has for its principal objects to control the  
10 draft both as to the quantity and the course of the air fed to the fuel, and to adapt the door for use as a screen or shield.

To these ends, my invention consists principally in securing the door to the furnace  
15 front in such a way that either end of said door separately or both ends simultaneously may be moved away from the furnace front.

It consists also in a duplex hinge fixed at one end to the furnace front and at the other  
20 to the door; and it consists further in the details of construction hereinafter described and claimed.

In the accompanying drawings, which form a part of this specification, Figure 1 is a perspective front view of a furnace door connected  
25 by a duplex hinge to a frame adapted to be fastened to the stove front; the door being shown partially open and parallel with said frame. Fig. 2 is a similar perspective view showing  
30 the door wide open. Fig. 3 is a plan view with the door in the position shown in Fig. 1. Fig. 4 is an elevation showing the door closed. Fig. 5 is a vertical section on line 5—5 of Fig. 4; and Fig. 6 is a rear view of the door shown  
35 in Fig. 4.

The door 1 corresponds in shape to but is preferably slightly larger than the opening in the furnace or stove, and is pivotally connected about its middle vertical line with a horizontal arm or arms 2, which are likewise pivotally connected to the stove or furnace front  
40 4 or to a frame 3 adapted to be secured to the furnace front. The particular means of effecting a pivotal connection is comparatively unimportant, as any suitable duplex hinge will answer this purpose. The drawings show the horizontal arms 2 secured by a pintle like an ordinary door to ears or lugs on the frame 3, while a long pintle 5 extends downwardly  
50 through holes provided therefor in the door and the outer ends of said arms. By this duplex or double-hinged construction, the door

may be swung open like a door with an ordinary hinge. It may also be swung out so as to rest parallel with the stove front, in which  
55 case air is admitted equally on all sides thereof; or it may be so swung that the end opposite the hinge on the frame is closed while the end next to said hinge is open, in which case air is fed to the fuel on the side near said  
60 hinge. This operation results from the pivotal connection of the door to the horizontal arms, whereby when the arms are swung away from the furnace, the door may be swung on its pivotal connection with said arms to bring  
65 either end thereof against the furnace front.

The arrows in Fig. 3 indicate the several directions of motion of which the device admits when the arms are swung open. In these several positions, of the door, the draft of air  
70 traverses different courses, so that by shifting the door the draft may readily be directed where it is most desired, and a more even combustion obtained throughout the fire-pot. To attain the best results, the ends of the opening  
75 should be approximately straight, so that the area of the opening at the end uncovered by the pivotal movement of the door may be more compact and the draft thereby confined to closer limits.  
80

It may be desirable to provide the door with an opening in its face controlled by an ordinary register damper 6 and also with a shield plate 7 on its inner side. When the shield plate is used, it should be removed or stand  
85 out from the main body to make an air space, and should be provided with slots therein to accommodate the swinging arms, as shown in Fig. 6.

The duplex hinge described is the best construction known to me for shifting the door  
90 into the several positions for controlling the draft. Obviously, however, it is practicable to make the door assume such positions by other mechanical connections, and for that  
95 reason I do not wish to restrict my claims to such duplex hinge.

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

1. The combination with a furnace provided  
100 with an opening, of a door for said opening adapted to uncover either end of said opening separately and both ends together, substantially as described.



2. The combination with a furnace provided with an opening whose ends are approximately straight, of a door for said opening connected to said furnace by a duplex hinge, 5 whereby it is adapted to control the amount and course of the draft, substantially as described.

3. The combination with a furnace provided with an opening whose ends are approximately straight, of a horizontal arm pivotally 10 secured thereto, and a door pivotally secured to the end of said arm, all substantially as and for the purposes set forth.

4. The combination with a furnace provided with an opening whose ends are approximately straight, of a horizontal arm pivotally 15 secured thereto, and a door pivotally secured on its inner face to the end of said arm, all substantially as and for the purposes set forth.

20 5. The combination with a furnace provided with an opening whose ends are approximately straight, of an arm pivotally secured to said furnace and a door for said opening pivotally secured near its middle portion to

the end of said arm, all substantially as and 25 for the purpose set forth.

6. The combination with a furnace provided with an opening whose ends are approximately straight, of a door for said opening 30 connected to the furnace by a duplex hinge and having a handle in the central front portion thereof, all substantially as and for the purposes set forth.

7. The combination with a furnace, of a door 35 connected therewith by a duplex hinge, said door having an opening in its face plate and having a lining plate slightly removed from the face plate thereof, substantially as described.

8. A furnace door frame provided with lugs 40 and an arm having pintles engaging said lugs, the outer end of said arm being pivotally connected to the middle portion of the door, substantially as described.

CHARLES K. PICKLES.

Witnesses:

T. PERCY CARR,  
WM. H. SCOTT.