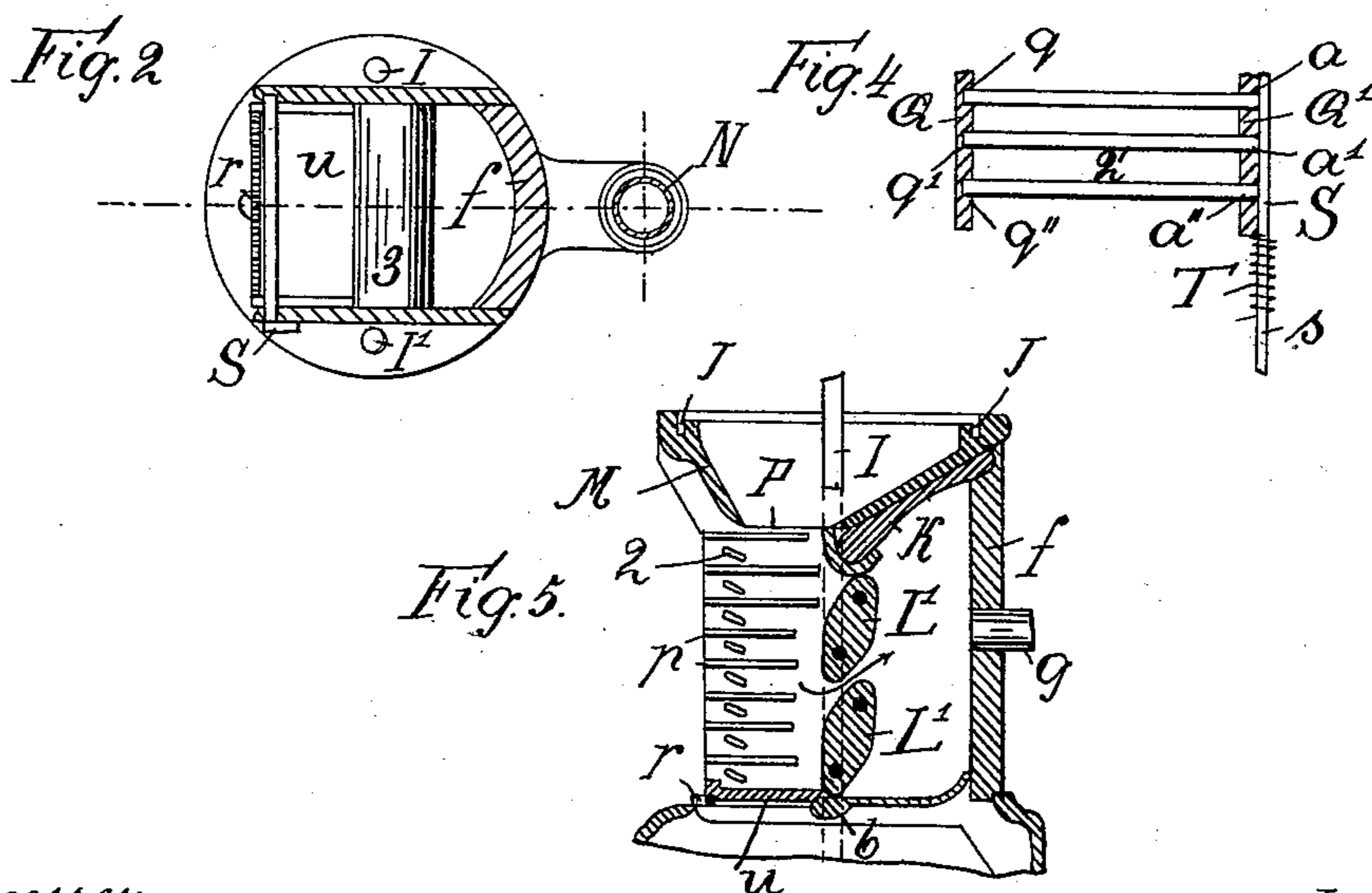
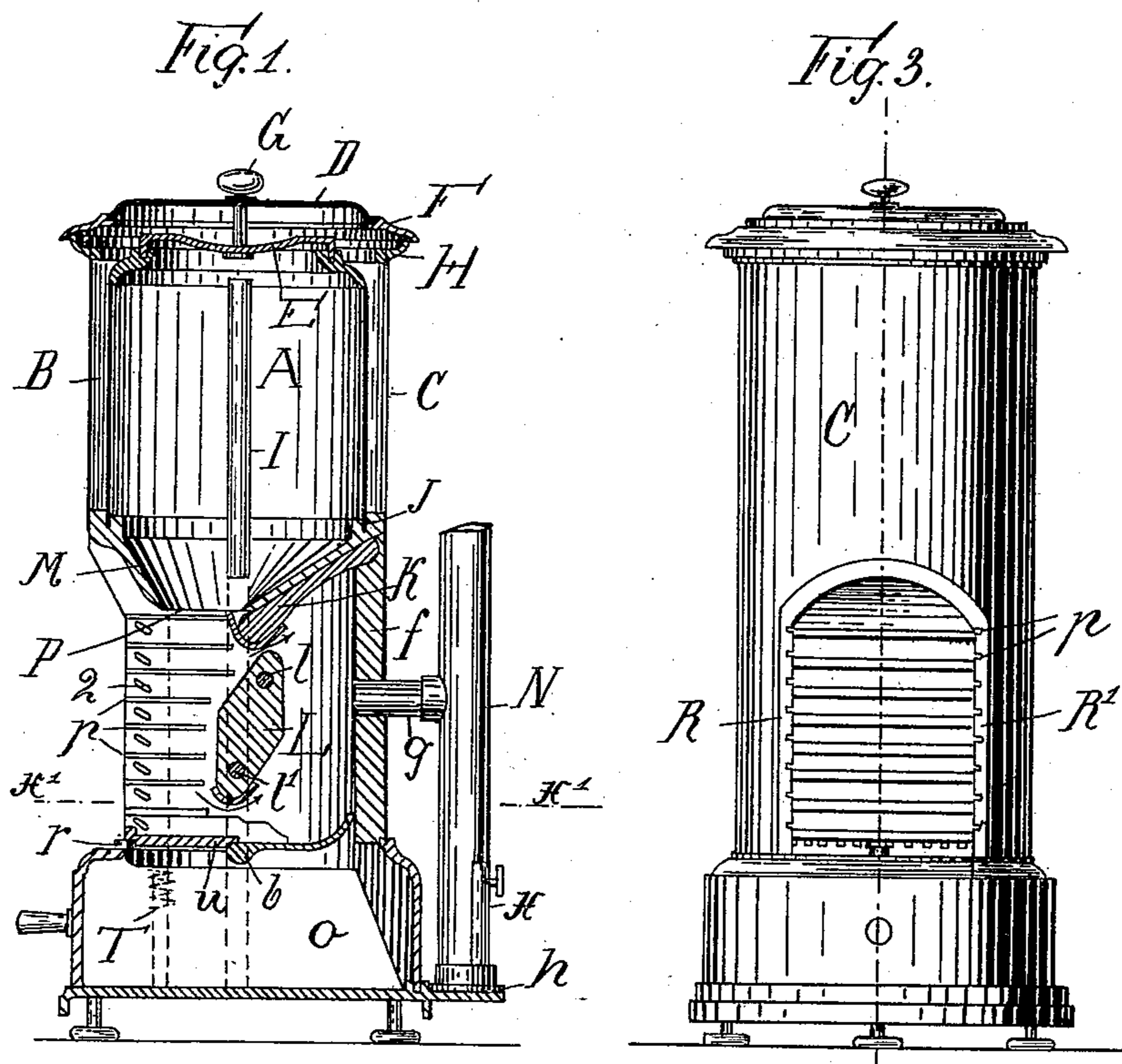


M. SEEBOLD.
STOVE.

No. 488,665.

Patented Dec. 27, 1892.



Witnesses:
E. Kaiser.
Carl Probst.

Inventor
Moritz Seebold.
by Robert Decker
Attorney.

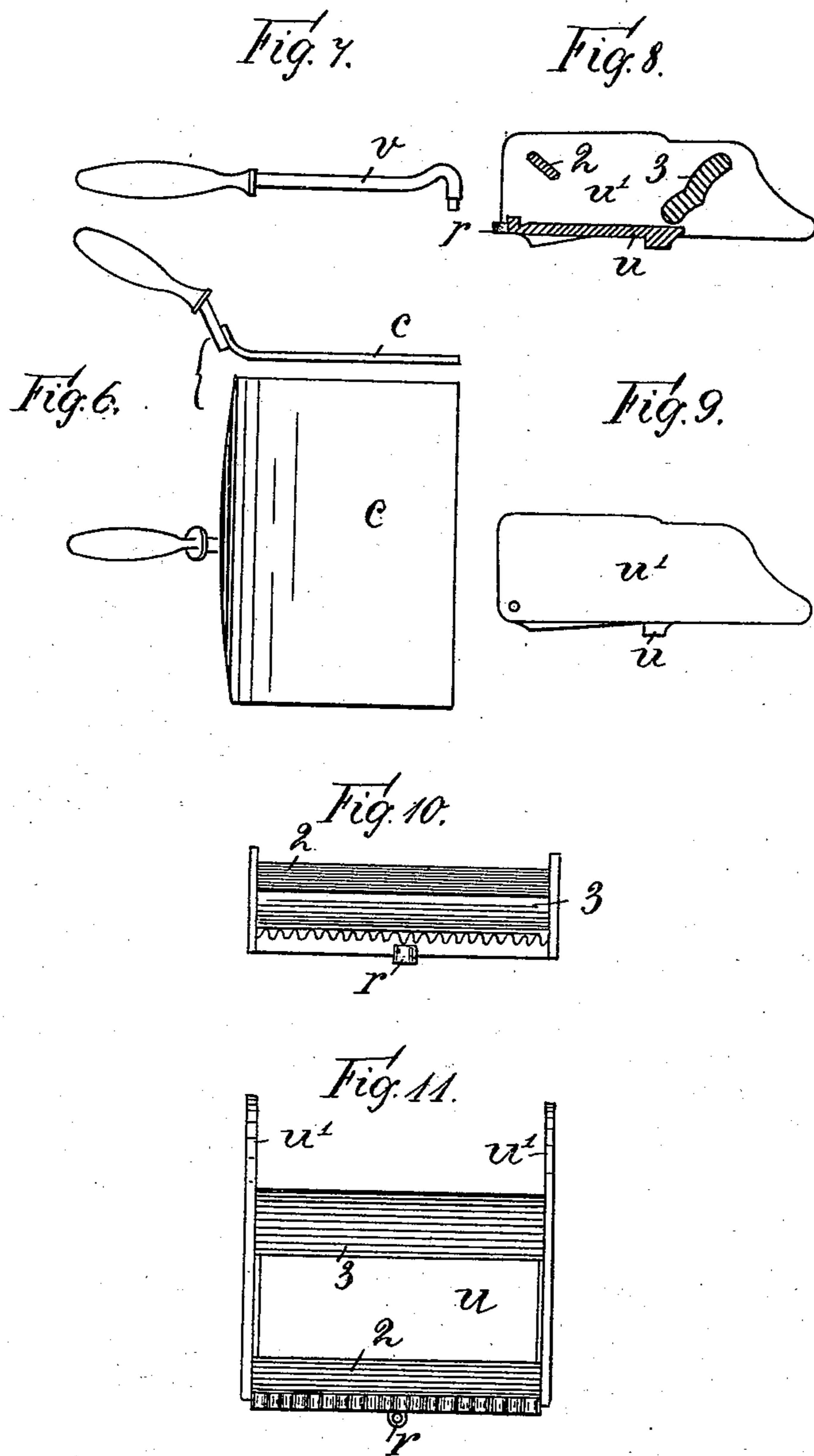
(No Model.)

2 Sheets—Sheet 2.

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Moritz Seebold
by Robert V. Smith
Attorney.

UNITED STATES PATENT OFFICE.

MORITZ SEEBOLD, OF BERLIN, GERMANY.

STOVE.

SPECIFICATION forming part of Letters Patent No. 488,665, dated December 27, 1892.

Application filed June 9, 1892. Serial No. 436,134. (No model.)

To all whom it may concern:

Be it known that I, MORITZ SEEBOLD, a subject of the King of Prussia, German Emperor, and a resident of Berlin, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Stoves, of which the following is an exact specification, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to stoves having a front wall and a rear wall both constituted by grate-bars, and consists in forming the rear wall by one or two large bars of a refractory material.

In the accompanying drawings Figure 1 is a sectional elevation of my improved stove, Fig. 2 is a sectional plan of the same taken on the line x^7-x^7 of Fig. 1, Fig. 3 is a front elevation of the same, Fig. 4 is a detail view showing the front grating, Fig. 5 is a sectional elevation, corresponding to Fig. 1 of a modification. Fig. 6, Sheet 2, is a side elevation and a plan of the shovel employed for my improved stove. Fig. 7 shows the hook for rocking the plate u placed over the ash-pit. Figs. 8 and 9 are a sectional and a side elevation respectively of the parts connected with said plate. Figs. 10 and 11 are a front elevation and a plan respectively of the same.

Similar letters and figures refer to similar parts throughout the several views.

The upper part of the stove is formed by the charging cylinder or shaft A, which rests with its lower edge in a circular groove J provided in the upper edge of the truncated pyramid M, made of cast iron. To this truncated pyramid I also secure a sheet-metal shell C inclosing the charging shaft A and fixed to the same at the top. The free annular space B is filled with sand. To the top of shell C there is also secured a cast-iron ring H, and to this a second ring, F, likewise of cast iron, which is provided with a rim for receiving the cover D. The latter may be grasped and removed by means of the knob G, and is firmly connected to a curved disk E, which fits with its edge into an annular groove provided in a cast-iron ring secured to charging shaft A. The rear side of the funnel-shaped quadrilateral truncated pyramid M is covered on its lower face with a projecting plate K made of

a refractory material, such as chamotte and the like, and increasing in thickness toward the front. This plate K is supported at its upper end by the refractory facing f covering the rear wall proper of the stove. The smoke-pipe g passes about through the middle of the facing f and serves at the same time as a support for the same, being secured to the upright branch-pipe N, which is firmly connected to the stove at h . At the bottom of pipe N, I provide a suitable opening, which may be opened more or less, or closed entirely, by means of the sliding door x .

Below the mouth P of the truncated pyramid M there is located the furnace proper, the side walls of which R R' are provided with horizontal grooves p . Between each two grooves p there is secured at the front of the stove a grate-bar 2 (see Figs. 1, 3, 4 and 5) in the particular manner illustrated by Fig. 4. The side-walls Q Q', which touch the above mentioned side-walls R R', are provided the one with notches $q q' q''$, the other with holes $a a' a''$. The bar or plate S is held against the said holes by means of a spring T inclosing the lower end of said bar S, this end s being preferably made cylindrical. The grate-bars 2 are inclined downward from the front to the rear.

Below the front end of the chamotte plate K the furnace is limited by a rhomboidal chamotte plate L, placed nearly vertical and held in position by iron bars or rods $l l'$. Thus the combustion gases may escape to the smoke-pipe g only at the top and at the bottom of plate L. This plate L, extending along the whole furnace from top to bottom, I employ, however, but for stoves of the largest size, and in stoves of ordinary size I employ two plates L', leaving only one passage for the escape of the combustion gases, as shown at Fig. 5. The furnace is closed at bottom by the removable plate u (see Figs. 8—11), which is provided at its front end with an eye r , in which the end of the hook v (Fig. 7) may be inserted. The rear part of plate u is supported by the plate b (see Fig. 1). The lateral guidance of plate u is attained by means of the side-plates u' , connected with each other by cross-bars 2 and 3 (Fig. 8). Below the plate u there is provided the ash-pit o .

In connection with my improved stove, I

also employ the shovel *c* represented in Fig. 6. Two pipes *I I'* extend vertically from the base of the stove through the entire height of the same, and lead below the curved plate *E*.

5 The stove is charged with fuel through the shaft *A* and funnel-shaped truncated pyramid *M*, and the fuel is held by the grate-bars 2 and chamotte-plate *L* (or plates *L'*, in the modification shown in Fig. 5), and rests on the

10 plate *u*. The glowing fuel may be watched through the front opening of the stove. The fire may be kindled conveniently in the following manner: Before charging the furnace, the shovel *c* is inserted into the lowest of the

15 grooves *p*, then the fuel is introduced, thereafter the plate *u* is drawn out by means of hook *v*, and an easily inflammable material is placed on said plate and set on fire. Thereupon the plate *u* is pushed back into the

20 stove, and the shovel *c* removed. The fire will first extend to the undermost layer of the fuel, and gradually to the upper part of the same. As the lower part of the fuel becomes consumed, the ashes and scoria obstruct the

25 space between the lower grate-bars 2, and the supply of air is diminished accordingly. This is however a favorable circumstance to secure an economical and good heating, as the combustion need not be as energetical in order to

30 maintain an agreeable temperature, as in order to raise the temperature of a cold room to the desired point. When the fire has burned down so far as to be nearly extinguished, the shovel *c* is entered into the groove *p* just below

35 the glowing fuel, and thus the latter is separated from the ashes. Thereafter the plate *u* is drawn out by means of hook *v*, and as soon as its rear part is no more supported by the plate *b*, it rocks downward and thus al-

40 lows the ashes to fall into the ash-pit *o*. When re-entering the plate *u*, a slight downward pressure is applied on the hook *v* in order to raise the rear of plate *u* over plate *b*. The

cross-bar 3 by coming in contact with the chamotte-plate *L* (or lower plate *L'*) will prevent the plate *u* from being rocked too high upward. As long as the furnace is in operation, heated air rises through the tubes *I I'* and travels to the top layer of the burning fuel, whereby a complete combustion of carbonic oxide gas is secured.

Any of the grate-bars 2 may be removed easily by pressing it against the lateral plate *S* until its end slips out of the notch *q*, and by then drawing it out forward.

The most important feature of my invention is the employment of the refractory plate *K*, facing *f*, and plate *L* (or plates *L'*) for protecting the rear wall of the furnace. Heretofore this part of the furnace was easily burned, and subject to excessive wear, and my improved construction completely avoids this defect.

Another important feature of my invention is the sliding door *x*, which is employed in lieu of the usual damper. This door serves also for removing the soot. According as the door *x* is opened more or less, the draft in the smoke-pipe *g* is increased or diminished, but even when door *x* is completely closed, all noxious combustion gases may freely escape through the smoke-pipe.

What I claim and desire to secure by Letters Patent of the United States is:—

In a stove: the combination, with the outer shell *C* and funnel-shaped lower end *M* of the shaft *A*, of the refractory facings *K* and *f*, and the refractory grate-plate *L*, substantially and for the purpose as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

MORITZ SEEBOLD.

Witnesses:

L. A. EDWARDS,
W. H. EDWARDS.