

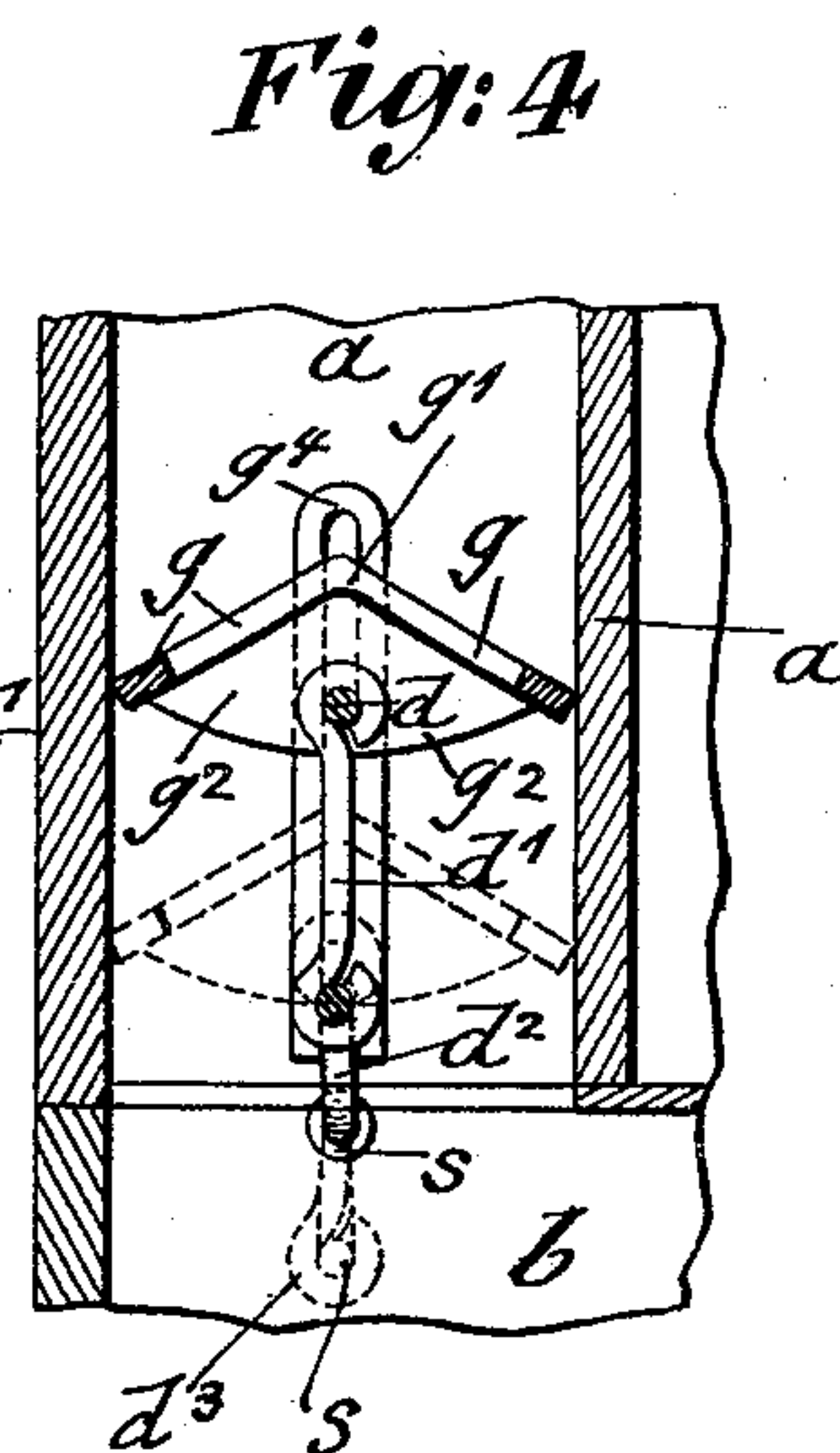
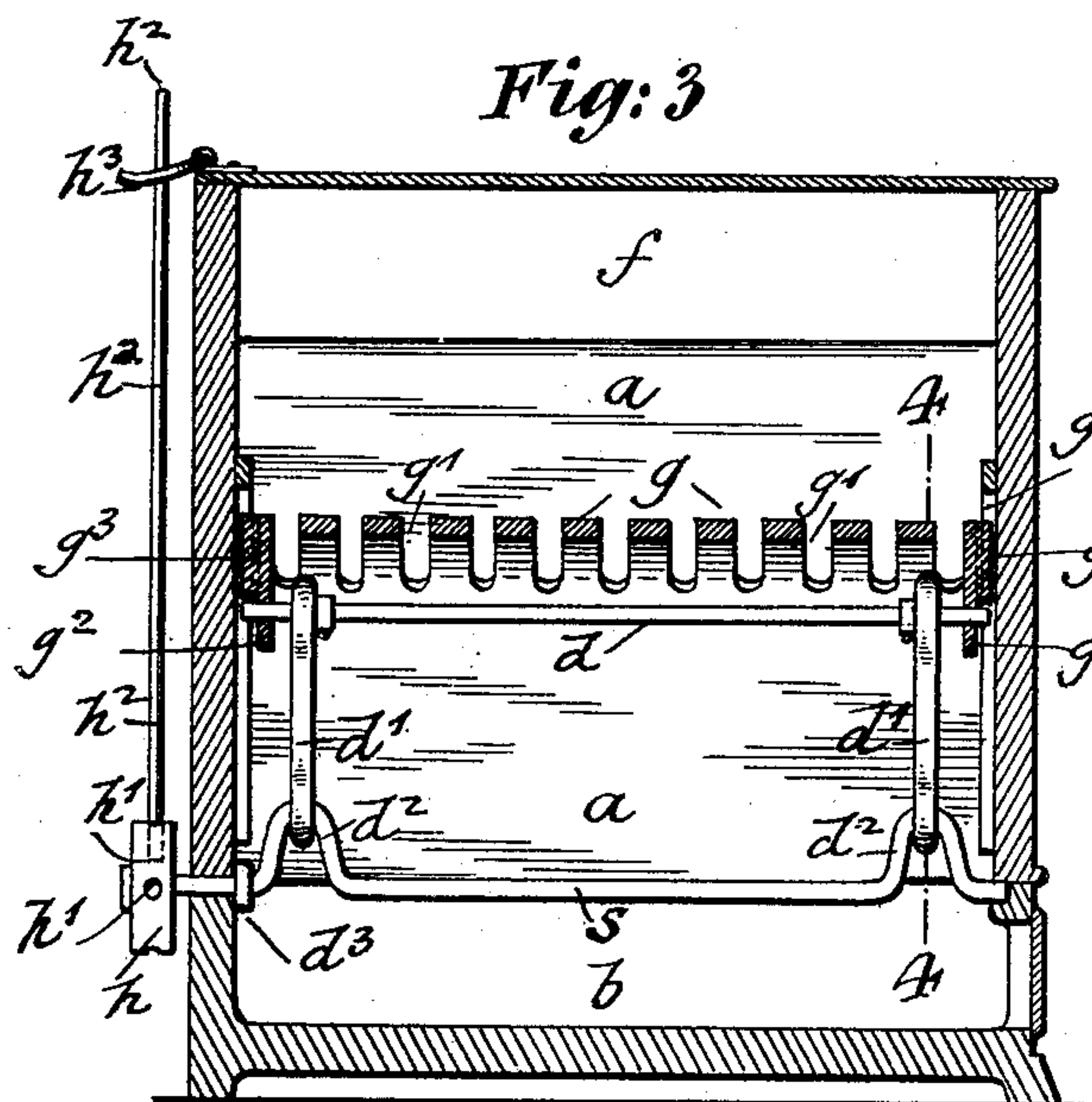
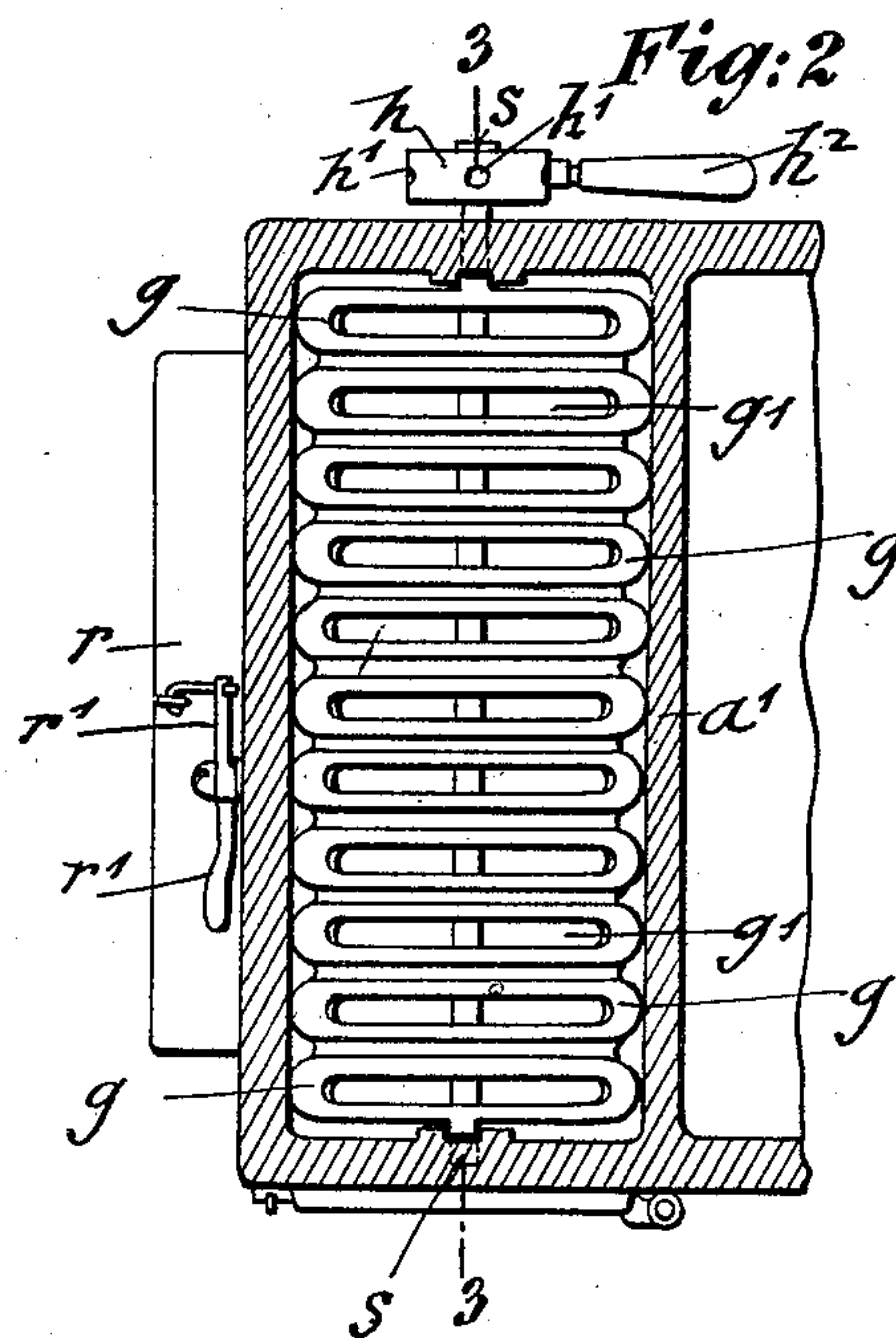
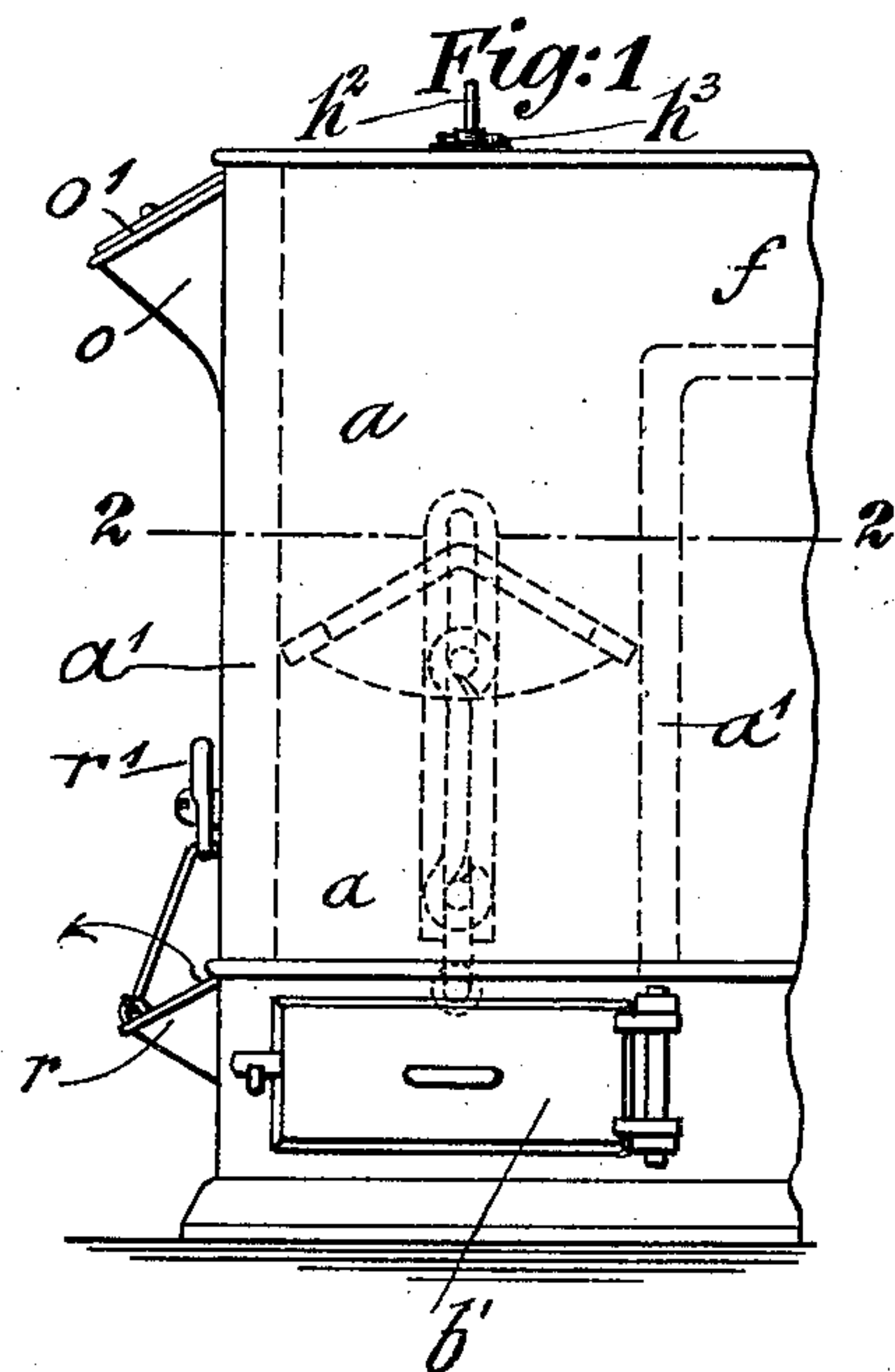
No. 890,880.

PATENTED JUNE 16, 1908.

E. SENN.

GRATE FOR STOVES.

APPLICATION FILED JULY 17, 1906.



Witnesses  
H. Schneider  
Henry J. Buchner

Inventor  
Edward Senn  
By his Attorneys  
G. W. Cooper



# UNITED STATES PATENT OFFICE.

EDWARD SENN, OF EGG HARBOR CITY, NEW JERSEY.

## GRATE FOR STOVES.

No. 890,880.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed July 17, 1906. Serial No. 326,535.

*To all whom it may concern:*

Be it known that I, EDWARD SENN, a citizen of the United States, residing in Egg Harbor City, in the county of Atlantic and State of New Jersey, have invented certain new and useful Improvements in Grates for Stoves, of which the following is a specification.

This invention relates to an improved grate for cooking-stoves, ranges, etc., which grate can be conveniently raised or lowered in the combustion-chamber from the outside by suitable mechanism so as to shake off the ashes and permit a brisker or slower fire, according as the fuel on the same is raised or lowered in the combustion-chamber; and for this purpose the invention consists of a grate for stoves which is constructed in the manner to be hereinafter described and claimed.

In the accompanying drawing, Figure 1 represents a side-elevation of a cooking stove with my improved grate, Fig. 2 is a horizontal section on line 2, 2, Fig. 1, showing a plan-view of the grate, Fig. 3 is a vertical longitudinal section through the grate on line 3, 3, Fig. 2, and Fig. 4 is a vertical transverse section through the grate and its actuating-mechanism, on line 4, 4, Fig. 3.

Similar letters of reference indicate corresponding parts in the different figures of the drawing.

Referring to the drawing, *a* represents the combustion-chamber of a cooking or other stove, *b* the ash-pit, *b*<sup>1</sup> the ashpit-door, and *f* the flue leading to the chimney. The combustion-chamber is formed of parallel walls *a*<sup>1</sup> between which a grate *g* is located, said grate being preferably made of inverted V-shaped or obtuse-angled cross-section and provided with transverse slots *g*<sup>1</sup>. The obtuse-angled grate *g* permits the sliding of the fuel sidewise over the inclined portions of the grate, and the shedding of the ashes through the transverse-slots *g*<sup>1</sup>. The body of the grate is scalloped at both ends so as to move easily along the side-walls *a*<sup>1</sup> of the combustion-chamber and form angular spaces for the dropping of the ashes between the edges of the grate and the walls *a*<sup>1</sup>. The ends of the grate are connected by transverse wall-portion *g*<sup>2</sup>, which is moved along the end-walls of the combustion-chamber and guided by means of ribs *g*<sup>3</sup> in grooves *g*<sup>4</sup> that are preferably formed in the end-walls of the combustion-chamber and formed in separate ways which are attached to the end-

walls, when the grate is adjusted higher or lower in the combustion-chamber.

For setting the grate in a higher or lower position in the combustion-chamber and for imparting a quick reciprocation to the same so as to separate the ashes from the burning fuel, the transverse end-walls *g*<sup>2</sup> of the grate *g* are connected by a longitudinal rod *d*, the ends of which project through said end-walls into the grooves *g*<sup>4</sup>. The rod *d* is connected by pivot-links *d*<sup>1</sup> with the cranks *d*<sup>2</sup> of a rock-shaft *s*, the ends of which are supported in bearings at the lower ends of the end-walls of the combustion-chamber, one end being inserted into a socket-bearing and the other end extended through the end-wall to the outside of the combustion-chamber, and provided with a collar *d*<sup>3</sup> for preventing the lateral shifting of the crank-shaft in its bearings. To the outer end of the rock-shaft *s* is keyed a wheel *h* having perforations *h*<sup>1</sup> into which a lever *h*<sup>2</sup> is inserted, the lever being extended in upward direction alongside of the end-wall of the combustion-chamber and engaged by a fork-shaped locking device *h*<sup>3</sup>, which is hinged to the top-plate of the combustion-chamber, as shown clearly in Fig. 3.

When it is desired to set the grate to its highest position in the combustion-chamber, the handle *h*<sup>2</sup> is locked by the locking-device *h*<sup>3</sup>, in which position the cranks of the rock-shaft *s* are in their upper vertical position, as shown in Fig. 3. When it is desired to set the grate to the lowermost position, the lever *h*<sup>2</sup> is released from the locking device *h*<sup>3</sup> and removed from the wheel *h*, which is then turned until the cranks of the rock-shaft *s* arrive at their lower vertical position after being turned through an angle of 180°. The handle is then placed into the hole at the top of the wheel *h* and locked again by the locking-device *h*<sup>3</sup>, the grate being thereby held locked in its lowermost position. The grate may also be set into an intermediate position between the highest and lowest positions, in which case the handle is applied, in the wheel *h*, intermediately between the diametrical holes in the same. In this case, the cranks of the rock-shaft *s* assume a horizontal position in one or the other direction. When the grate is supported in its highest position, it is closer to the flue *f* which leads through the stove to the chimney, so that a quicker combustion of the fuel takes place. In this position, the register *r* for supplying air is lifted into raised position by its operating



lever-mechanism  $r^1$ , so that a rapid combustion of the fuel takes place when the fire is to be started or when the highest degree of heat is required for the cooking and baking operations. When the grate is set at its intermediate or lowermost position and the air-supply register is closed or only partly opened, a less brisk fire, or a slow combustion of the fuel is obtained, which latter is desirable when the fire is to be kept over night.

When it is desired to shake the ashes from the fuel, the handle-lever  $h^2$  is quickly reciprocated and thereby the grate moved up and down by the rock-shaft  $s$  and the connecting-links  $d^1$  so that the fuel slides over the inclined portions of the grate and sheds the ashes through the transverse slots and edge-spaces, for being collected in the ash-pit. By reason of the fact that the grate is guided by both the ribs  $g^3$  and the ends of the longitudinal rod  $d$ , it is guided very effectively and reliably. As the force is applied to the rod  $d$ , it is especially advantageous that the ends of said rod are guided vertically in addition to the body of the grate.

The fuel is supplied to the grate through a supply chute  $o$  in the upper part of the com-

bustion-chamber, which is covered by a hinged register  $o^1$  in the usual manner, so as to regulate by partly or entirely opening of the register the quicker or slower combustion of the fuel on the grate.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

In a cooking-stove, the combination, with the combustion-chamber, of guides applied interiorly to opposite walls of said chamber, a grate having walls at opposite ends, ribs on said walls of the grate movable in said guides, a rod extending longitudinally of the grate and having its ends protruding through the end-walls thereof so as to be guided in said guides without projecting exteriorly of the combustion-chamber, and means acting on said longitudinal rod whereby the grate is moved in said guides.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

EDWARD SENN.

Witnesses:

PAUL GOEPEL,

HENRY J. SUHRBIER.