

No. 634,867.

Patented Oct. 17, 1899.

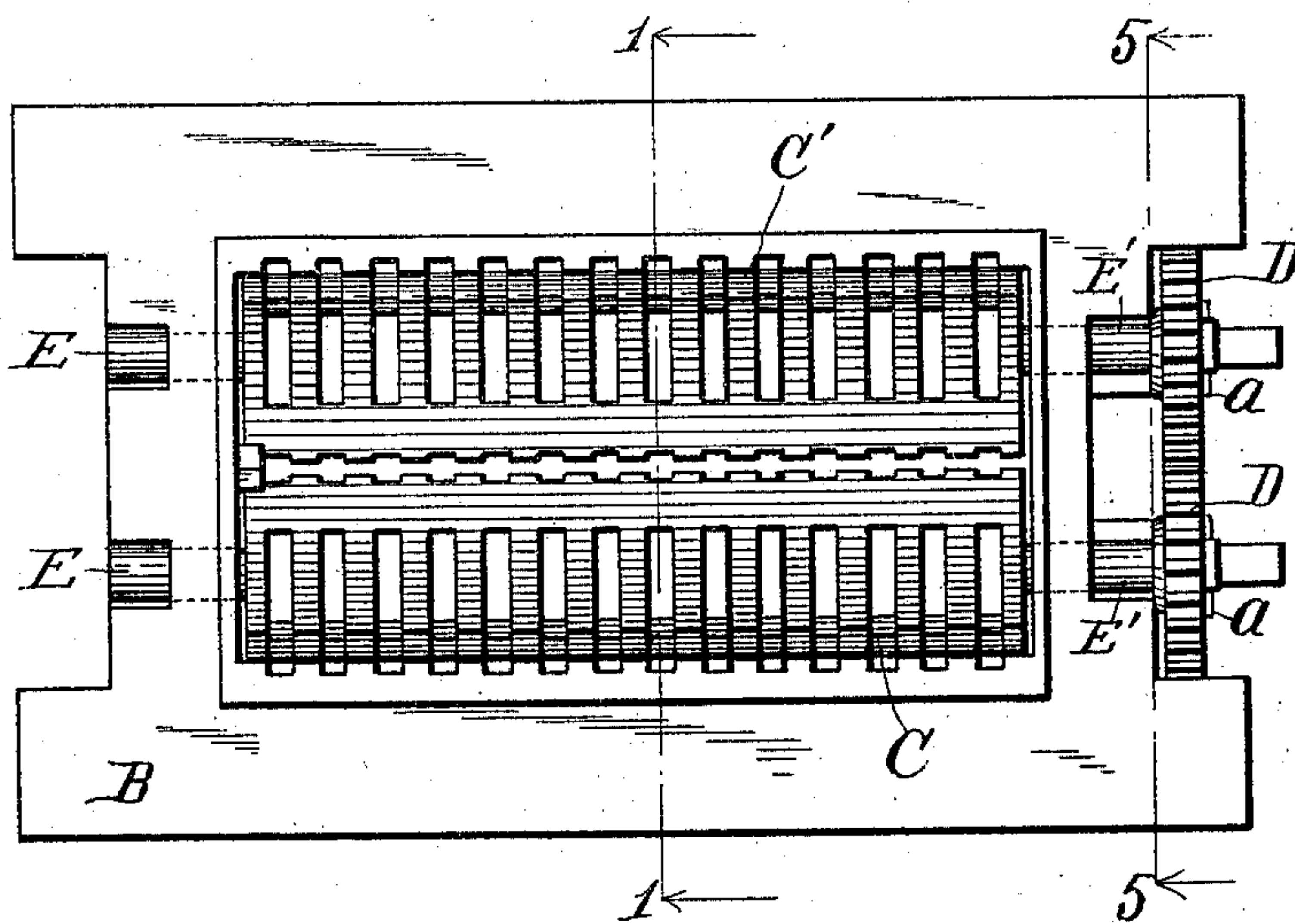
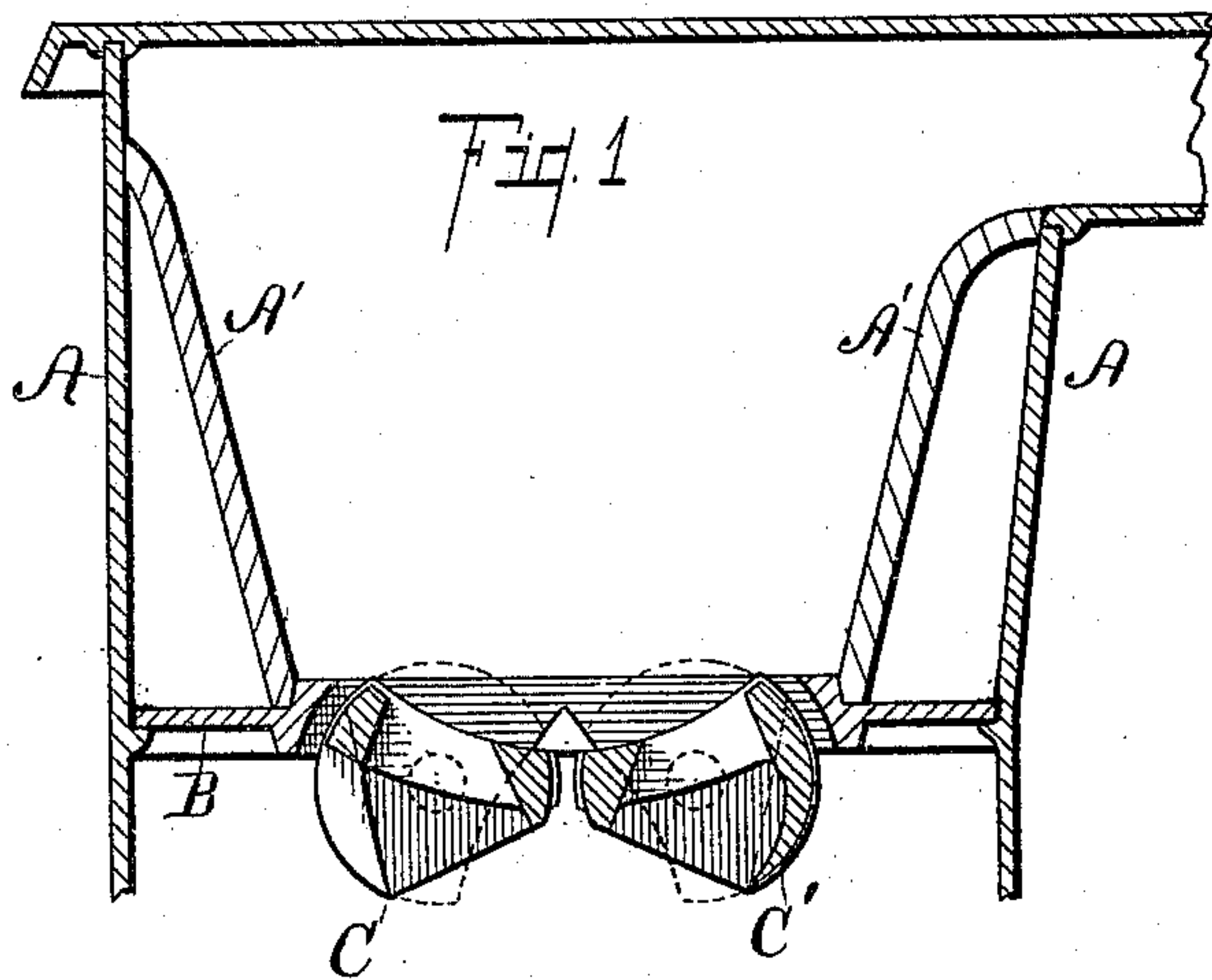
A. K. BECKWITH.

REMOVABLE GRATE FOR COOKING STOVES, &c.

(Application filed Apr. 6, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

W. S. Wood
Otis A. Earl

Inventor,

By Arthur K. Backwith
Fred L. Chappell
Att'y.

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2 Sheets—Sheet 2.

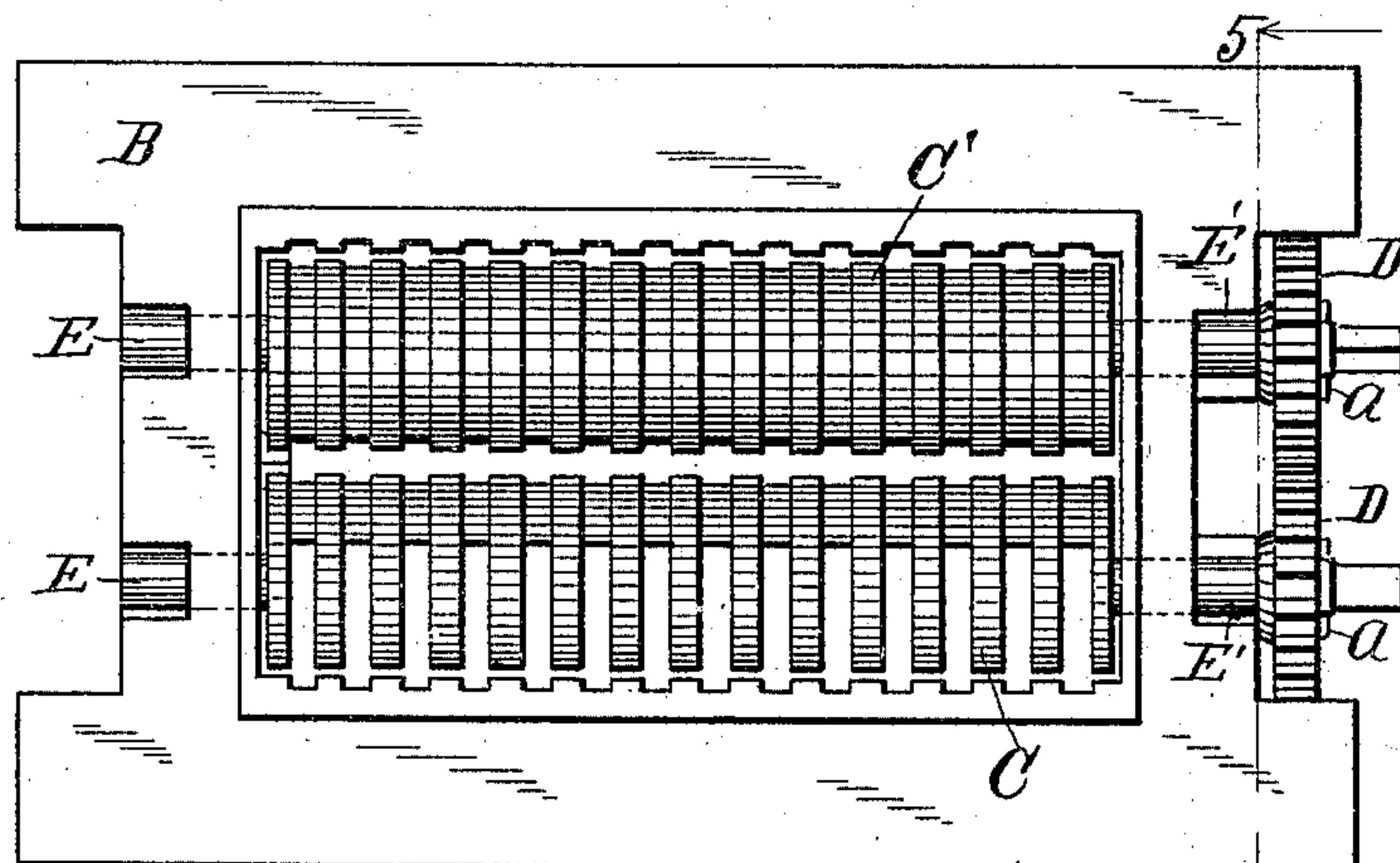


Fig. 3

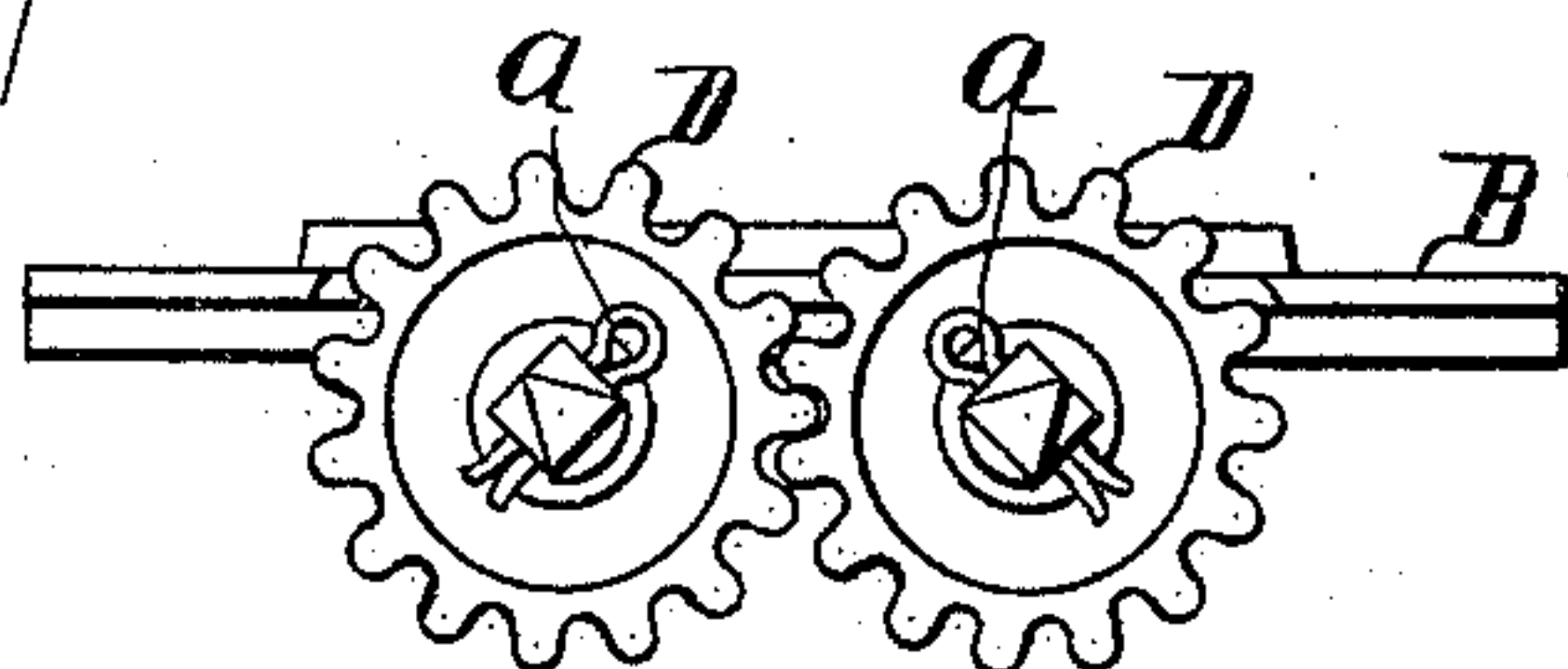


Fig. 4

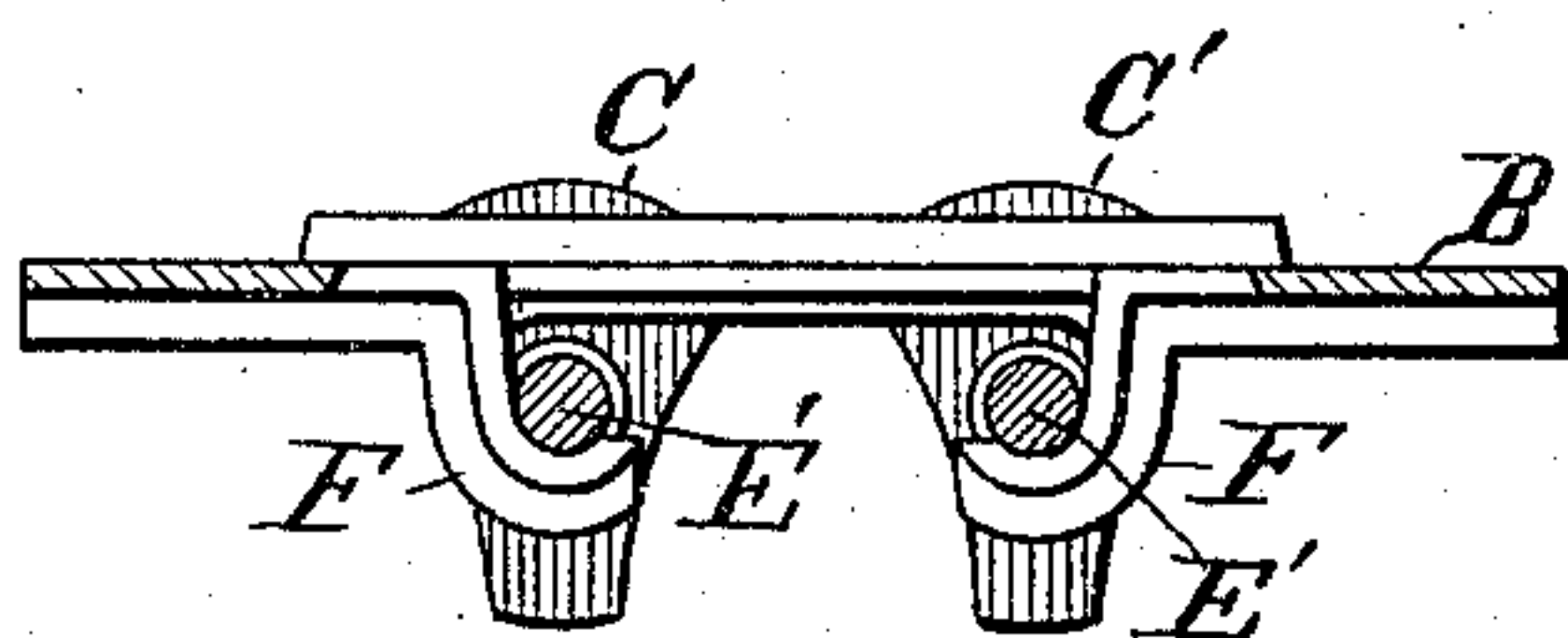


Fig. 5

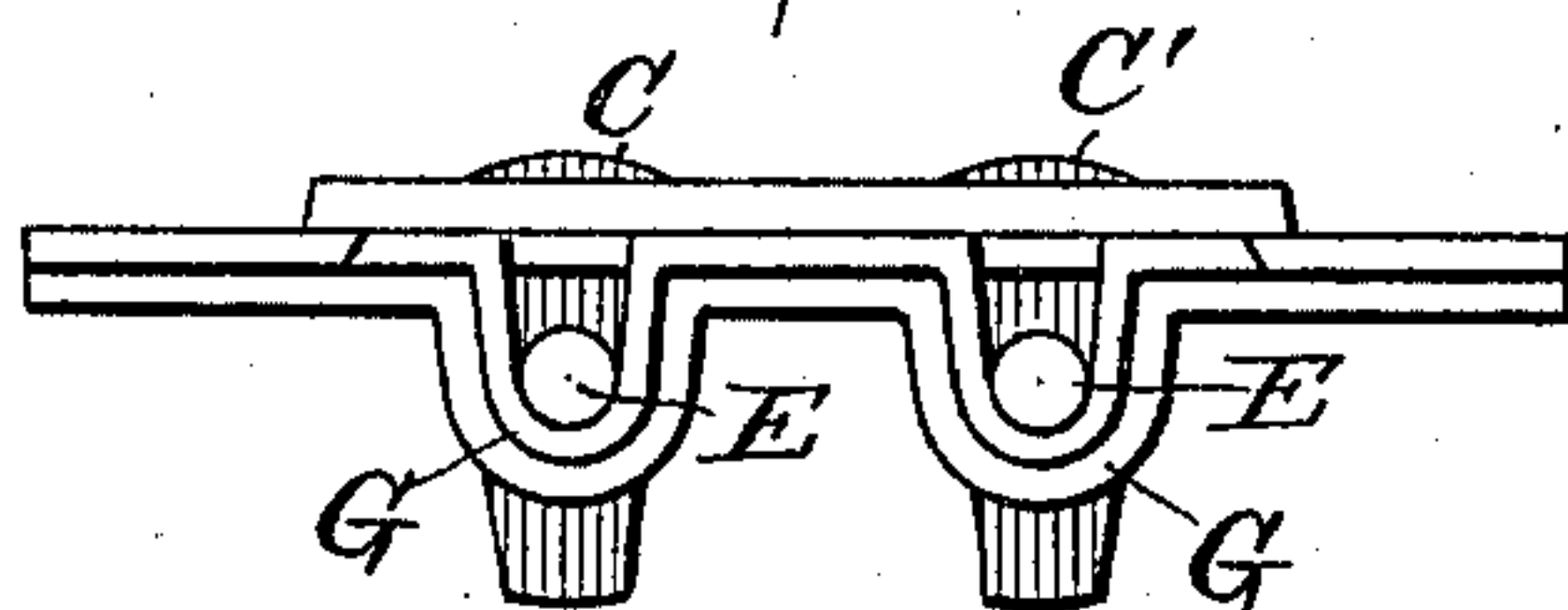


Fig. 6

Witnesses:

W. S. Wood
Otis A. Earl

Inventor,

Arthur K. Beckwith

By *Chas. L. Lippell*
Att'y.

UNITED STATES PATENT OFFICE.

ARTHUR K. BECKWITH, OF DOWAGIAC, MICHIGAN, ASSIGNOR TO FRED E. LEE, OF SAME PLACE.

REMOVABLE GRATE FOR COOKING-STOVES, &c.

SPECIFICATION forming part of Letters Patent No. 634,867, dated October 17, 1899.

Application filed April 6, 1898. Serial No. 676,707. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR K. BECKWITH, a citizen of the United States, residing at the city of Dowagiac, in the county of Cass and State of Michigan, have invented a certain new and useful Removable Grate for Cook-Stoves, &c., of which the following is a specification.

This invention relates to improvements in grates for stoves or ranges.

Heretofore the usual method of inserting grates into cook-stoves and ranges has been by securing the grates in a frame supported in suitable ways in the body of the stove. When it is desired to remove the grates in that construction, it is necessary to slide the frame from the stove, which is usually a matter of considerable difficulty, owing to the fact that the frame or grate has become more or less warped with the heat.

The objects of this invention are to provide an improved construction of grate which can be readily removed from the stove without the necessity of withdrawing the grate-frame.

A further object, also, is to provide a grate which can be easily changed from a wood-grate to a coal-grate.

Further minor objects will definitely appear in the detail description to follow.

I accomplish these objects of my invention by the devices and means described in this specification.

The invention is definitely pointed out in the claims.

The structure is fully illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical transverse detail sectional view through the fire-box of a cook-stove of the usual pattern, taken on a line corresponding to line 1 1 of Fig. 2, showing my improved grate-bars in position. Fig. 2 is a top plan view of the grate-frame and grate-bars according to my invention and the grate being set as a coal-grate. Fig. 3 is a top plan view of the same construction, with the grates shifted to form a wood-grate. Fig. 4 is an end elevation of the structures appearing in Figs. 2 and 3, taken from the right-hand side. Fig. 5 is a sectional view

taken on a line corresponding to line 5 5 of Figs. 2 and 3. Fig. 6 is an end elevation of the grate, taken from the left-hand end of Figs. 2 and 3.

In the drawings similar letters of reference refer to similar parts throughout the several views, and all of the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines.

Referring to the lettered parts of the drawings, A is the stove-body.

B is the grate-frame, and A' A' are the stove-linings, which rest upon and are supported by the grate-frame.

My improved grate-frame has loops G G to the inner end to receive journals E on the ends of the grate-bars. Hooks F F, corresponding to the loops G G on the rear and opening toward the center of the grate-frame B, are provided on the front end of the grate-frame B and are to receive the front ends or journals of the grate-bars. The front ends of the grate-bars are made square to receive pinions D D, which are supported on the same so as to be easily removed. The said pinions are retained on the shafts E' E' by suitable cotter-pins a a. The ends of the shafts project beyond the pinions to receive the crank or shaker for the purpose of shaking the grates. A suitable stop is provided for the grate-bars. The pinions D are of such size that they mesh when placed on the shafts E E at the end of the grate-bar and so hold the journals of the shafts E' E' securely in place in the hook portions F.

When it is desired to remove this grate from the stove, it is unnecessary to remove the grate-frame. It is only required to withdraw one of the cotter-pins a, remove the pinion, when the bar can be easily swung out of the hook-bearing F and then withdrawn from the loop G at the opposite end. When one grate-bar is removed, the other bar can be removed without detaching the pinion by the same motion. Thus it is very easy to remove and renew the grate-bars from the grate-frame.

I have provided my improved grate-bars with double grate-surfaces. The convex side of one of the grate-bars C, I prefer to make solid, having grate-openings only through the

concave wing of the same. The other bar of the pair is made with openings through both the concave and convex wings. Thus it will be observed that by placing the grate in the position indicated in Figs. 1 and 2 the whole of the opening is left free, but by rotating the grate to the position indicated in Fig. 3 one-half of the air-opening is cut off, making the grate better adapted for use in a wood-stove. The advantages of this will be readily understood. I desire to state in this connection that the particular formation of grates is not essential to my improved means of securing grate-bars in position, as I have indicated which could be used with other means of support.

I will state that to make the device successful and operative it is only necessary to make one of the pinions D removable. However, the bar can be constructed more readily independent from the pinion, and therefore as the pinions do not receive wear and are not materially effected by the heat of the stove it is desirable to make the pinions removable, so that it will not be necessary to renew them in renewing one or more of the grate-bars.

With this method of supporting the grate-bars it will also be readily understood that it is unnecessary to have the grate-plate adapted to slide into and out of said body, which under certain circumstances might be of considerable value in the manufacturing of stoves. It is also needless to remark that in securing the pinions on the shafts of the grate-bars so long as they are conveniently

retained in position it is immaterial how the same is accomplished if one pinion is made easily removable.

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

1. The combination of a grate-plate having loops C, C, at one end and hooks F, F, at the opposite end and opening toward the center; grate-bars having suitable journals at each end supported in loops G, G, and bearings F, F, the ends of the shafts being squared, and gears on the ends of the shafts of the grate-bars of such size as to mesh with each other when the journals of the grate-bars are in position in the hooks, all coacting substantially as described for the purpose specified.

2. In a rocking grate, grate-bars journaled at each end; journal-bearings in the stove for each end; the bearings at one end of the bars being hook-shaped and opening toward each other; pinions on said grate-bars one at least of which is removable adapted to mesh with each other, when the journals of the grate-bars are in position in the hooks, and retain the bars in position and facilitate their easy removal for the purpose specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

ARTHUR K. BECKWITH. [L. S.]

Witnesses:

J. O. BECROFT,
M. J. SHEPARD.