

JOHN CAVEN.

Improvement in Fire Place Grates.

No. 120,490.

Patented Oct. 31, 1871.

Fig. 1.

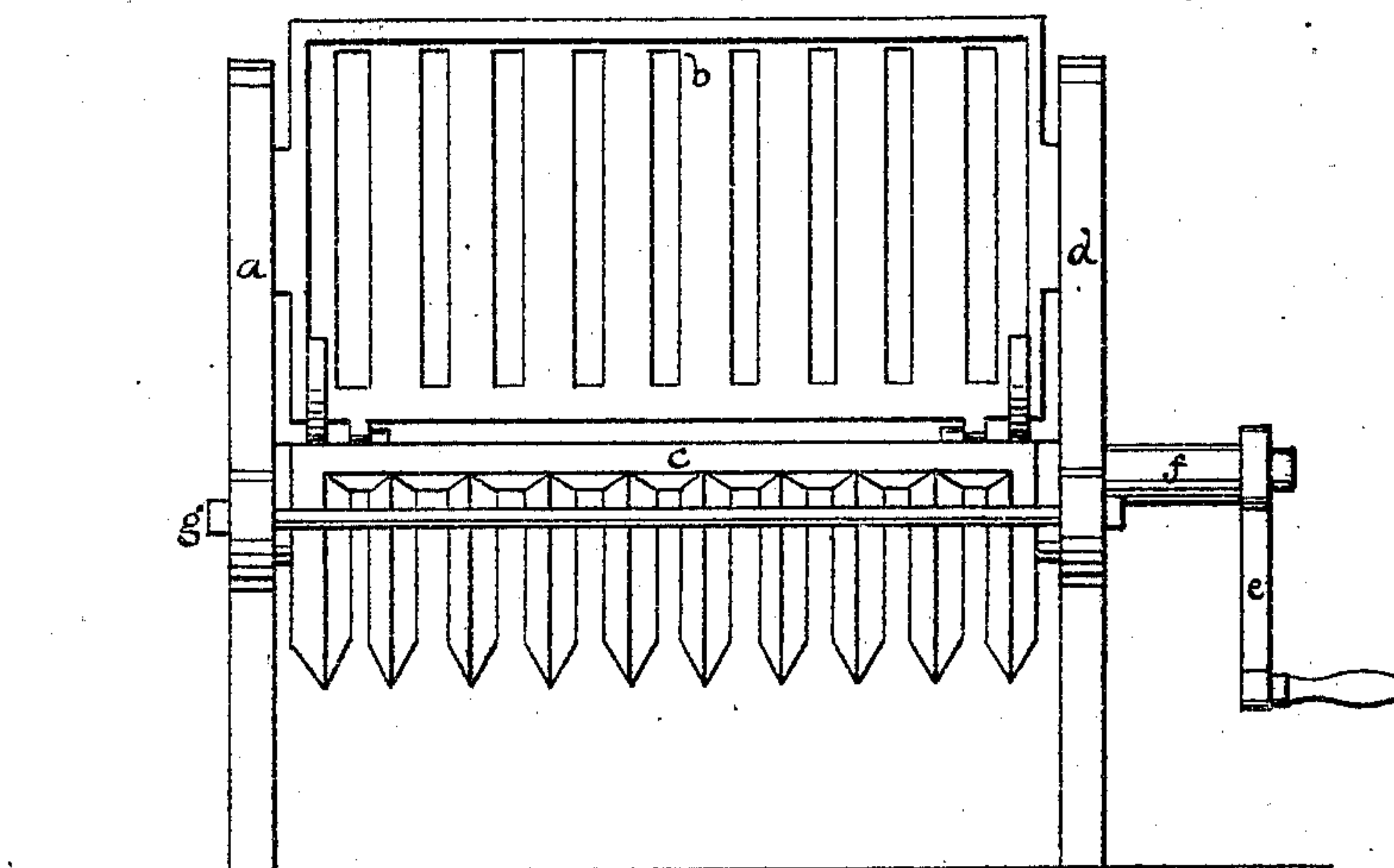
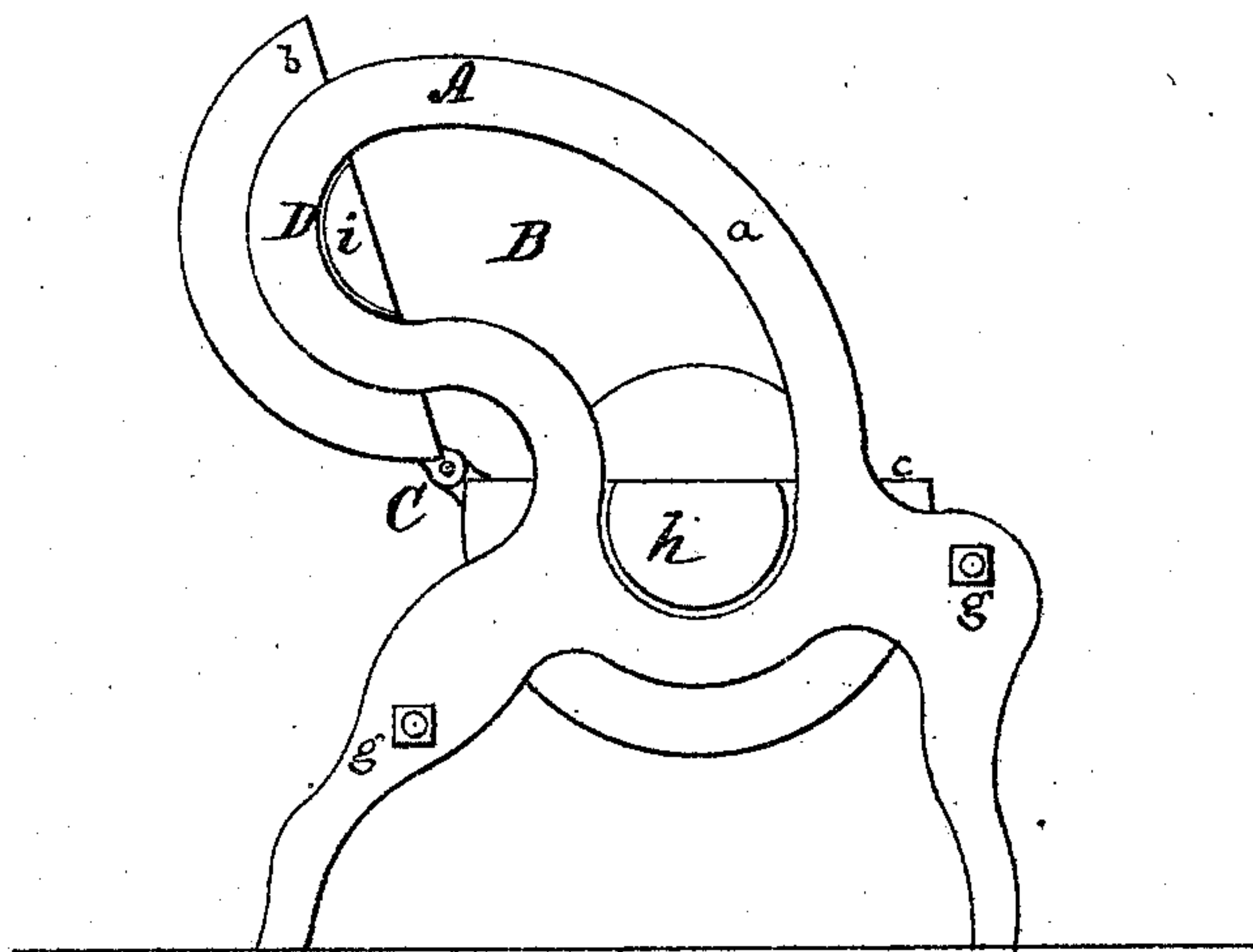


Fig. 2.



Witnesses.

Edwin May  
Chas. A. Moffett

Inventor.

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Fig. 3.

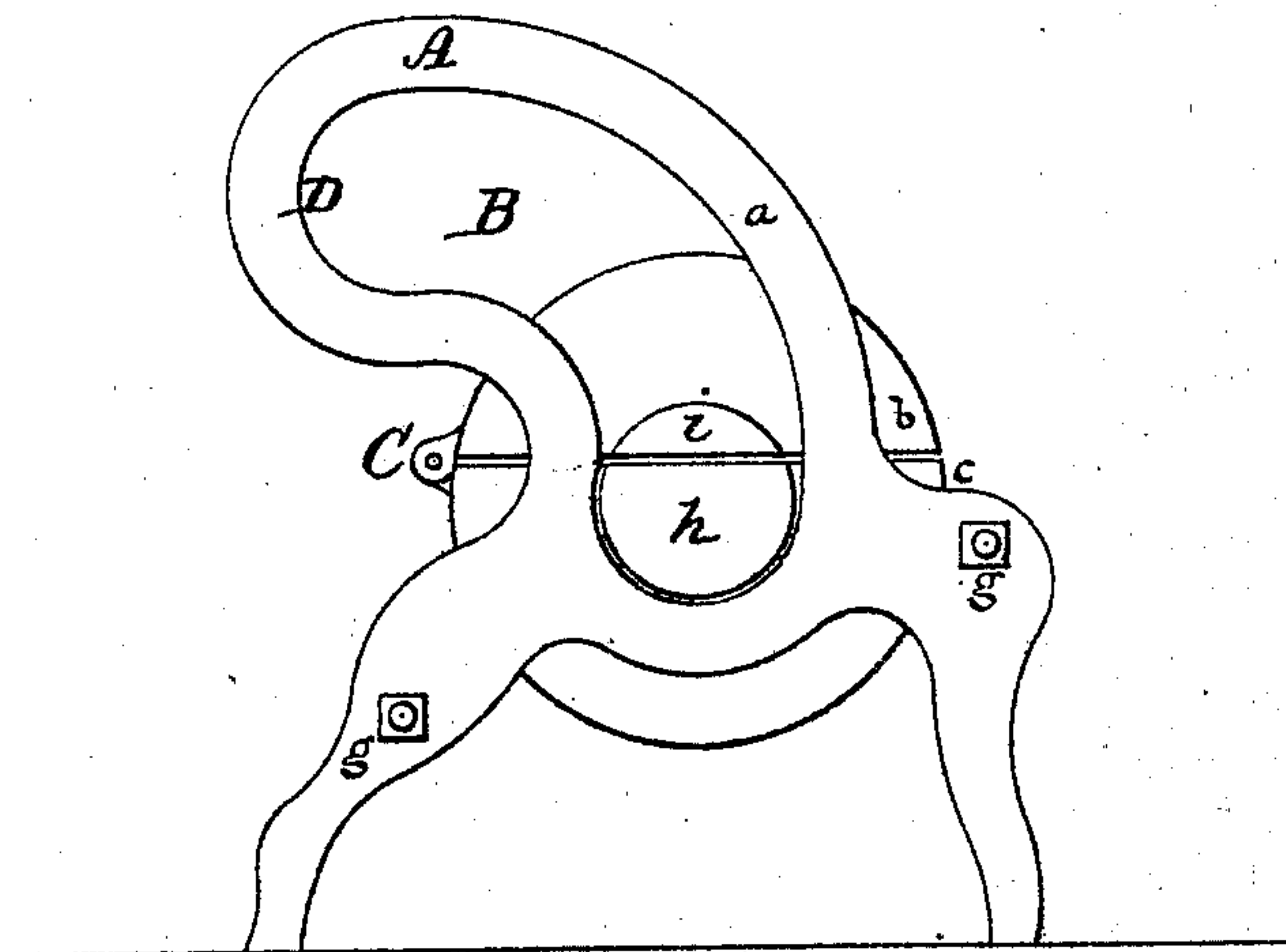
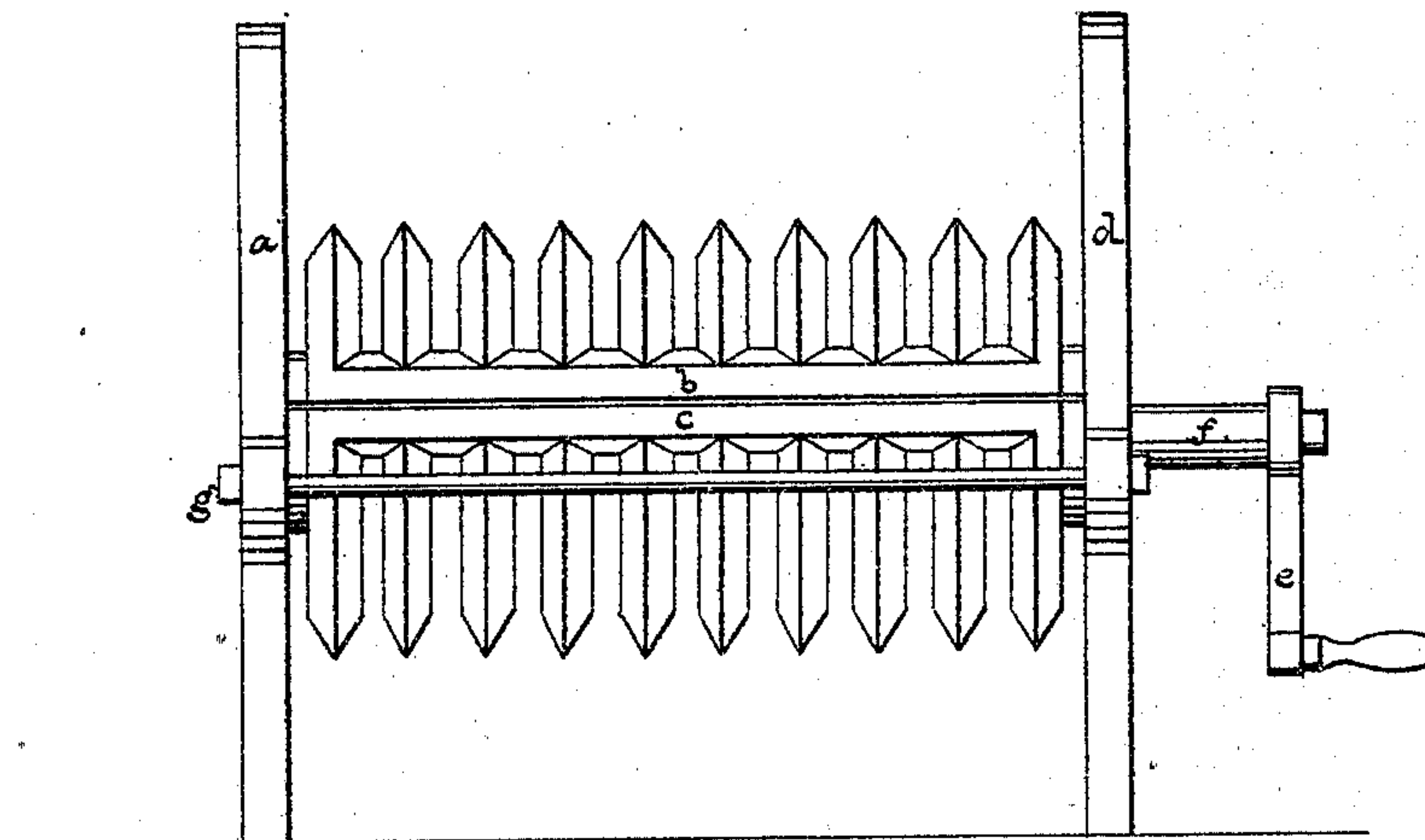


Fig. 4.



Witnesses.

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# UNITED STATES PATENT OFFICE.

JOHN CAVEN, OF INDIANAPOLIS, INDIANA.

## IMPROVEMENT IN FIRE-PLACE GRATES.

Specification forming part of Letters Patent No. 120,490, dated October 31, 1871.

*To all whom it may concern:*

Be it known that I, JOHN CAVEN, of Indianapolis, in the county of Marion, State of Indiana, have invented certain Improvements in Coal-Grates, of which the following is a specification:

My invention relates to that class of coal-grates which may be revolved for the purpose of freeing the fire of ashes; and my invention consists in dividing the journals upon which the grate is revolved for the purpose of holding the hinged part closed without fastenings while the grate is being turned; and in connection therewith constructing the supporting side frames of the grate with rearward extensions for the purpose of forming seats to support the hinged upper section when open, as shown in Fig. 2 of the accompanying drawing.

Figure 1 is an elevation of grate or front view, showing the same open for use, together with the stand or frame. Fig. 2 is an end view, showing the grate open and end of stand. Fig. 3 is an end view, showing the grate closed and one end of stand. Fig. 4 is a front view, showing the stand and crank attachment for operating the grate when closed.

*a d* is the frame or stand for revolving grate, being held in position by the bolts *g g*, and is so arranged that the top part of grate *b* can be thrown open, or both parts of grate *b c* can be made to revolve when closed, as shown in Figs. 3 and 4, by means of the crank *e*. This crank *e* is adjusted to the shaft *f*, which is securely fastened to lower half of grate *c*.

The stand and grate can be fitted into a close or open stove, or sheet-iron casing of any device, the shaft *f* projecting through the casing to receive the crank *e*; or the stand and grate may be set in an open fire-place. In this position the crank and shaft would be left off and a wheel the same size in diameter as the grate would be substituted, being fitted against the frame *d* and securely bolted to the lower half of grate *c*.

The advantage of this construction of coal-grates is the great saving of labor and fuel. The ease with which the ashes and dust can be removed or shaken out from the grate will be

readily understood, as the revolving of the grate must displace every particle of ashes and dust without the trouble of using a poker.

The labor in building or starting a fire in this grate is less and more easily done, as all the coke or unburned coal and cinder remain within the grate after all the ashes and dust are shaken out by revolving the grate a few times; then the top part *b* is opened and the kindling placed on the top of the coal and coke; the top part of the grate is then closed and reversed, and the kindling, being at the bottom, is fired.

The upper part of grate *b* will become a protection when needed, as it has only to be closed over the lower part of grate *c* to form a perfect safeguard against coals falling out or being thrown out by action of the heat, as would be the case when used in an open fire-place or stove.

It will be observed that the journal-bearings of the grate are divided in two parts, *h i*, so that each hinged section carries a part of the journal-bearing, and that as the grate is revolved neither section can fall down or become opened, as the seats for the journals hold the two parts together, whether the top part or cover be up or down, thereby obtaining the very great advantage of dispensing with all fastenings, such as buttons, &c., for this purpose.

Another important advantage is gained in constructing the side supporting frames for the grate with curved rearward extensions *A*, as shown in Figs. 2 and 3, and providing them with openings *B*, struck from a radius of which the grate-hinge *C* is the center, in order to form a seat, *D*, for the cover or upper hinged section *b* when open, as shown in Figs. 2 and 3. In this way the grate can be revolved and kept closed by the contact of the journal-bearings with their seats, and the upper or smaller section *b* can be opened at pleasure by simply turning it up with its part of the journals against the seats *D* of the supporting frame.

This form of grate can be used for stoves, fire-places, furnaces, or in any place where it is an object to save fuel and labor and keep fire in a safe manner.

What I claim as my invention is—

1. The divided journal-bearings *h i*, in combi-

nation with the hinged sections *b c* of a revolving coal-grate, for the purpose of retaining the sections closed without fastenings while being revolved, as described.

2. The seats *D* of the extensions *A*, arranged to form a continuation of the journal-bearing seats to support one of the hinged sections of the grate when opened, as described.

3. The combination of the hinged revolving

grate *b c* with the divided journal-bearings *h i*, the supporting side frames *a d*, the curved extensions *A* with their openings *B*, and seats *D*, the several parts being constructed and arranged for use as described.

JOHN CAVEN.

Witnesses:

EDWIN MAY.

CHAS. A. MOFFATT.

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