

No. 665,675.

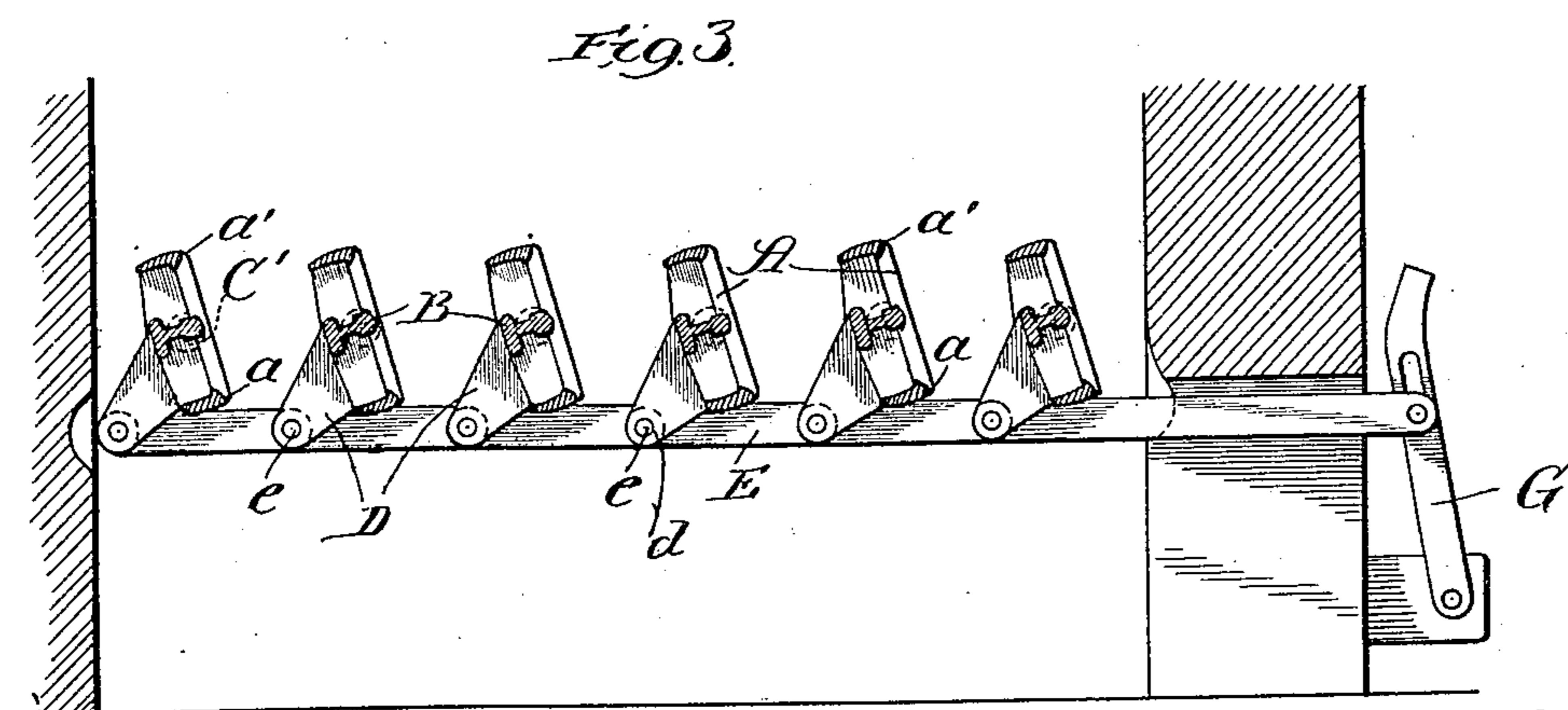
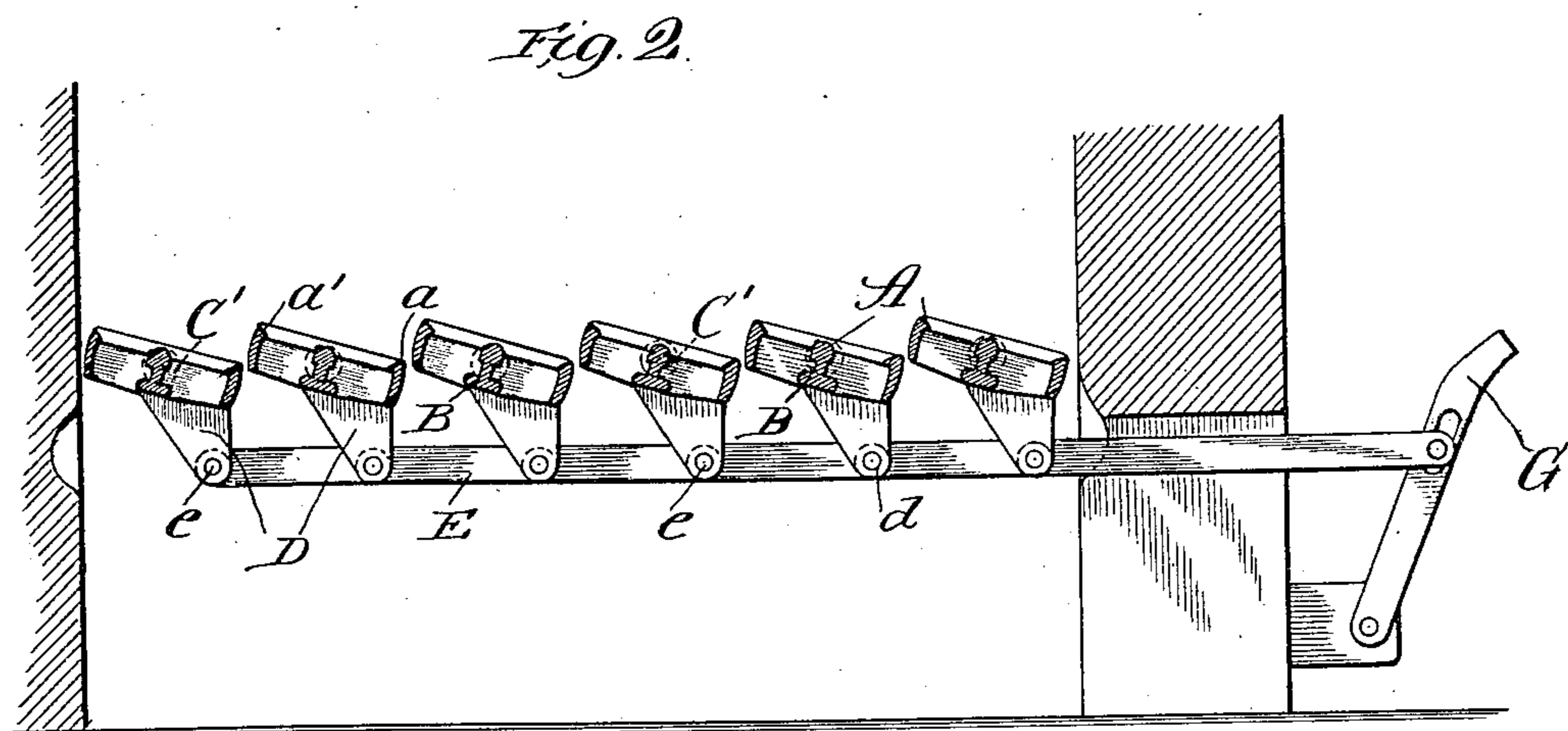
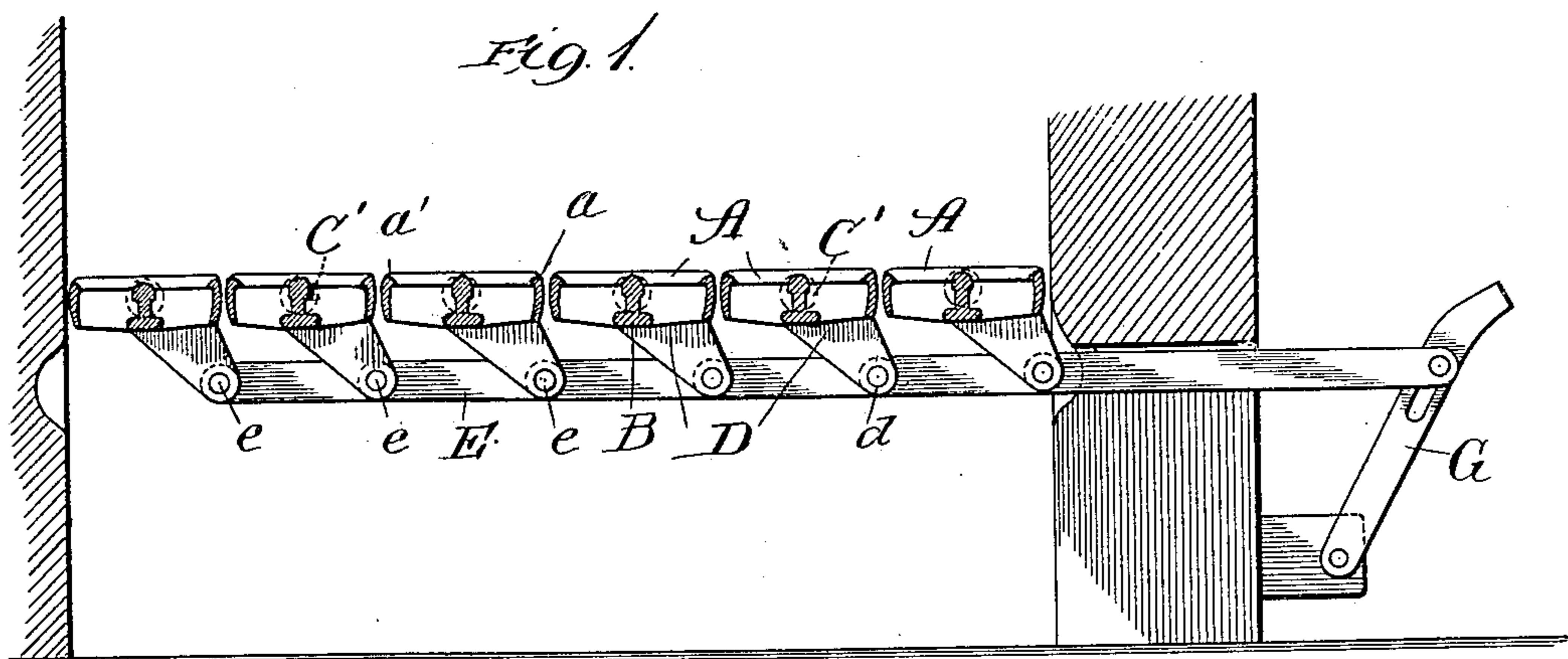
Patented Jan. 8, 1901.

J. R. GEORGE.
FURNACE GRATE.

(Application filed Nov. 19, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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J. R. GEORGE.
FURNACE GRATE.

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2 Sheets—Sheet 2.

(No Model.)

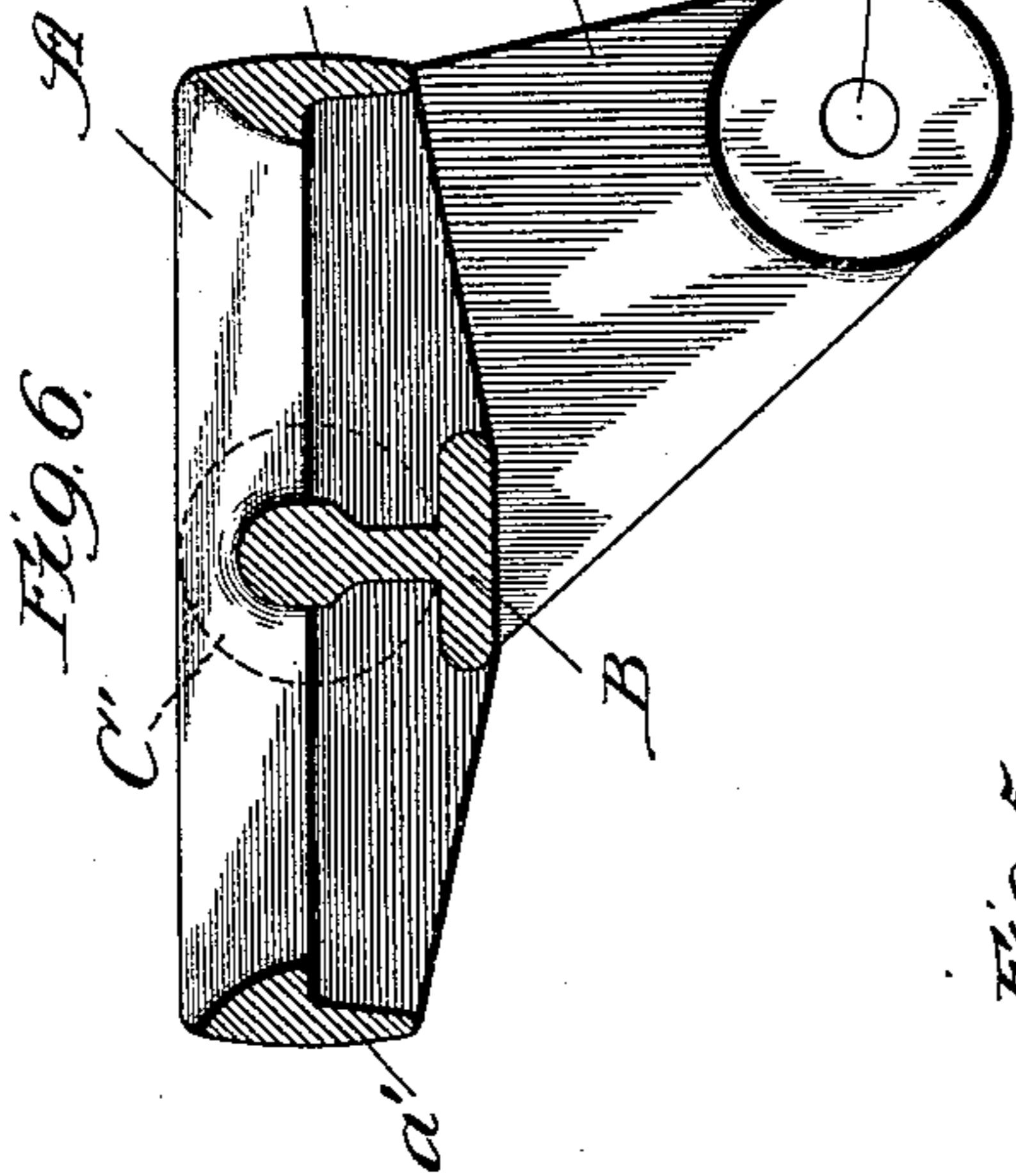
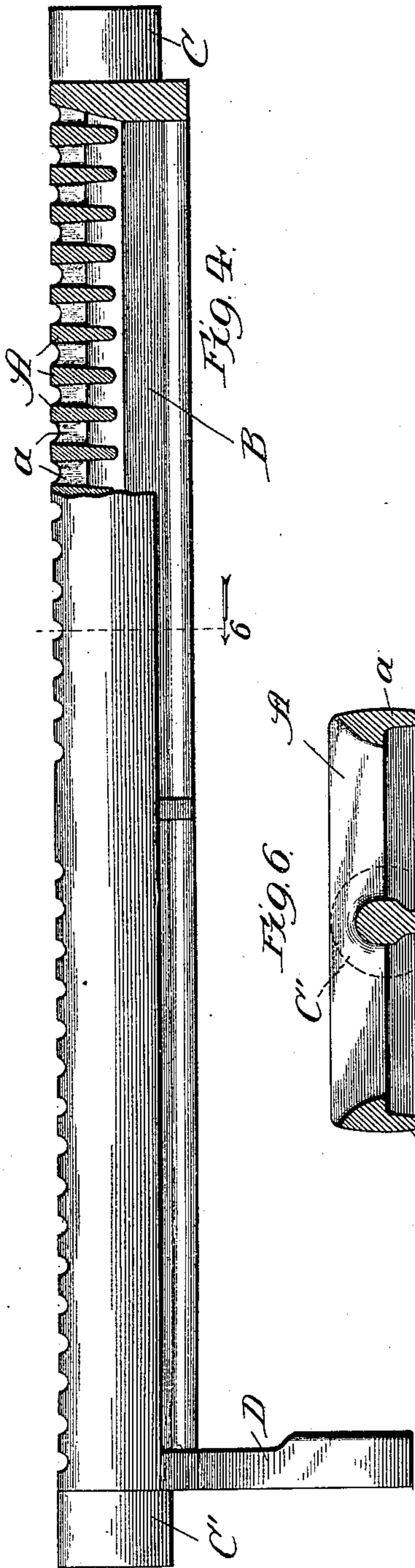
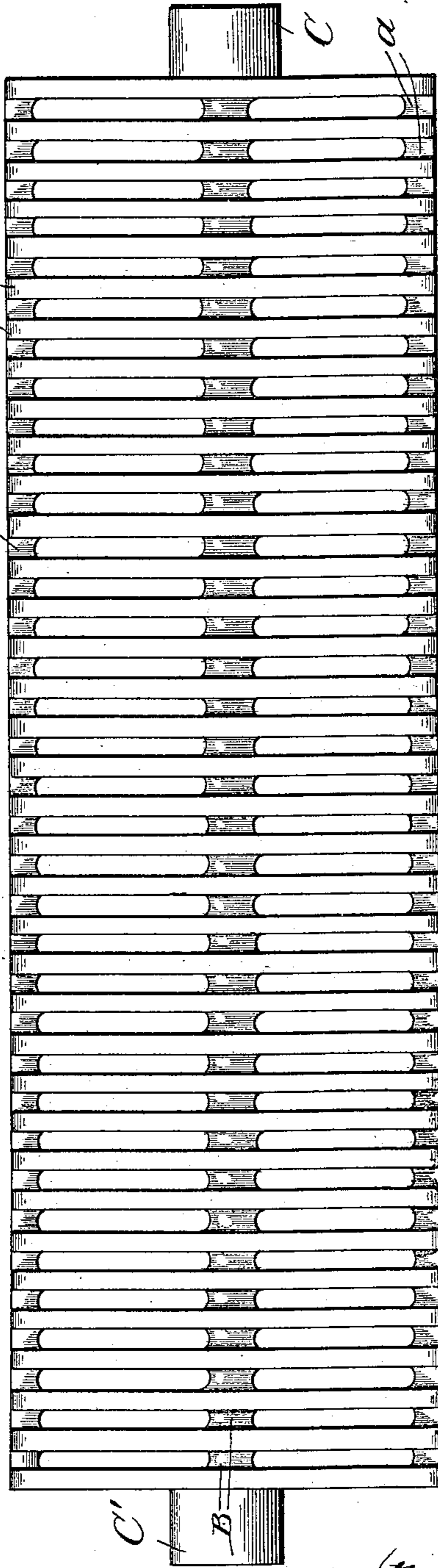


Fig. 5.



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UNITED STATES PATENT OFFICE.

JEROME R. GEORGE, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
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FURNACE-GRATE.

SPECIFICATION forming part of Letters Patent No. 665,675, dated January 8, 1901.

Application filed November 19, 1898. Serial No. 696,915. (No model.)

To all whom it may concern:

Be it known that I, JEROME R. GEORGE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Furnace-Grates, of which the following is a specification.

My invention relates to that class of furnace-grates which are known as "shaking-grates," and particularly to the construction of the individual bars which go to make up the grate.

The object of my invention is to provide a simple, economical, and efficient grate-bar; and the invention consists in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical sectional elevation taken through a furnace and showing my improved grate-bars in operative position; Fig. 2, a similar view showing the bars in the position they assume during the operation of "shaking;" Fig. 3, a similar view showing the bars in the dumping position; Fig. 4, a side elevation of one of my improved bars, shown partly in section; Fig. 5, a plan view of a bar constructed in accordance with my improvements, and Fig. 6 a transverse sectional view taken on the line 6 of Fig. 4.

In the art to which this invention relates it is well known that furnace-users are desirous of obtaining a simple and economical grate which will admit as much air as possible to the fuel, not interfere with the strength of the individual bars, and at the same time enable the fire to be easily cleaned. The principal object of my invention, therefore, is to provide a grate which will give the users the advantages above named.

In constructing a grate-bar in accordance with my improvements I make a grate-bar and provide it with a multiplicity of transverse bars A and connect them together at their ends by means of curved side bars α and α' and at the center portion by means of a strengthening-rib B. These transverse side bars and strengthening-ribs are so arranged that their upper sides lie in a plane below the upper surfaces of the transverse bars, so as to form a plurality of transverse grooves

which extend clear across the bar, as particularly shown in Fig. 6, and permit the air to reach the largest amount of fuel possible and provide a construction in which the least amount of material is used consistent with the maximum amount of strength.

In order to hold the bar in position, it is provided with trunnions C and C' at each end thereof, arranged at or near the longitudinal center of the bar and adapted to rest in recesses in the side walls (not shown) arranged for the same. This arrangement provides an evenly-balanced bar and permits it to oscillate or shake whenever it is desirable or necessary. Each bar is further provided with depending arms D, having projections d extending therefrom and to which, as shown in Figs. 1 to 3, a connecting-rod E is pivotally secured by means of the pins e . The outer end of this connecting-rod is secured to a shaking-lever G, arranged, preferably, outside of and in front of the furnace.

An inspection of Fig. 6 will show that the side bars of the individual grate-bars are curved at their outer surfaces concentric with the axes of the trunnions upon which the bars swing, so that the bars may be swung past each other into the position shown in Fig. 2 and shake the grate, agitating the mass of fuel thereon, and without increasing the size of the opening between the grate-bars—a material advantage in furnaces where fuel is used that burns to a clear ash. This kind of grate-bar also prevents the clogging of furnaces that use fuel where clinkers form, for the reason that there is no danger of the clinkers dropping between intermeshing bars, and thus interfering with the operation of shaking.

I claim—

1. A flat grate-bar, the component parts of which are integral and consist of a multiplicity of transverse bars, a central longitudinal strengthening-rib of the full depth of the body of the bar with its upper surface below the upper surface of the transverse bars, two trunnions for mounting the grate-bar as a whole at its ends, and two side bars, each side bar having a curved outer face on a line concentric with the center of the trunnions and having depressions in its top edge

forming air-spaces between the transverse bars, substantially as described.

2. A flat grate-bar the component parts of which are integral and consist of a multiplicity of transverse bars, a central longitudinal strengthening-rib of the full depth of the body of the transverse bars with its upper surface below the upper surface of the transverse bars, two trunnions for mounting the grate-bar as a whole at its ends, each trunnion located in line with the strengthening-rib, and two side bars each side bar of a less depth than the transverse bars leaving air-spaces between the upper face of the side bars and the upper face of the transverse bars, each side bar having a curved outer face on a line concentric with the axes of the trunnions, substantially as described.

3. A flat grate-bar the component parts of

which are integral and consist of a multiplicity of transverse bars, a central longitudinal strengthening-rib of the full depth of the body of the grate and with its upper surface below the upper surface of the transverse bars, two trunnions for mounting the grate-bar as a whole at its end, two side bars each side bar of a less depth than the transverse bars leaving an air-space between the upper faces of the side bars and the transverse bars, each side bar having a curved outer face on a line concentric with the axes of the trunnions, and a depending arm at one end of the grate-bar, substantially as described.

JEROME R. GEORGE.

Witnesses:

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