No. 862,742. PATENTED AUG. 6, 1907.

G. A. KOHOUT.

FURNACE GRATE.

APPLICATION FILED AUG. 12, 1905.

2 SHEETS—SHEET 1.

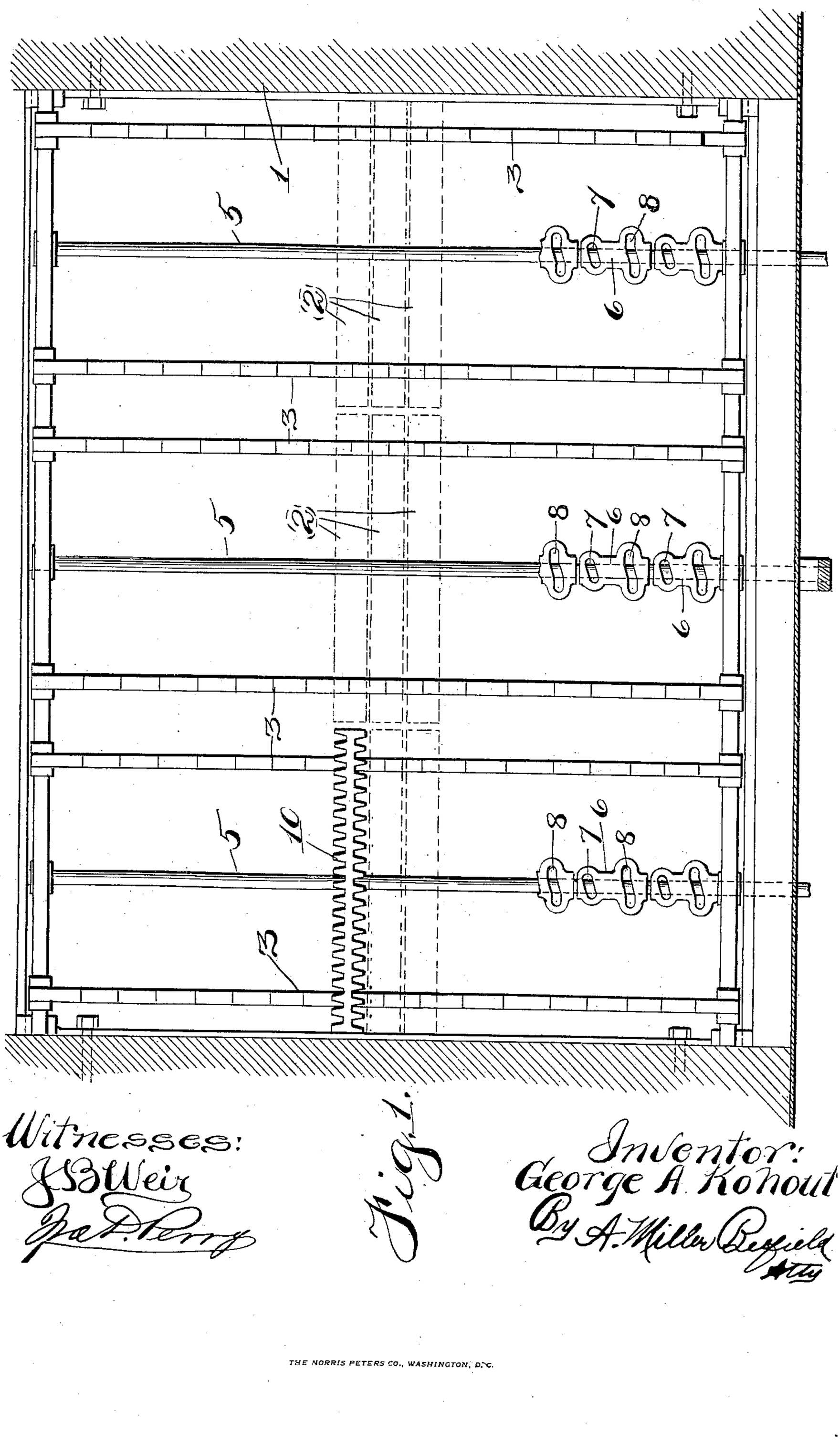

Fig. 1.

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2 SHEETS—SHEET 2.

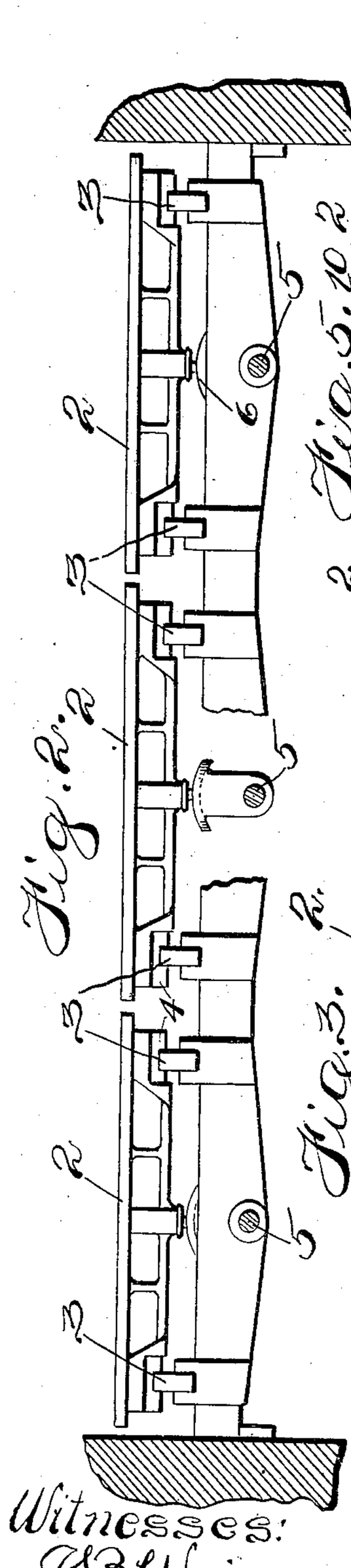

Fig. 2.

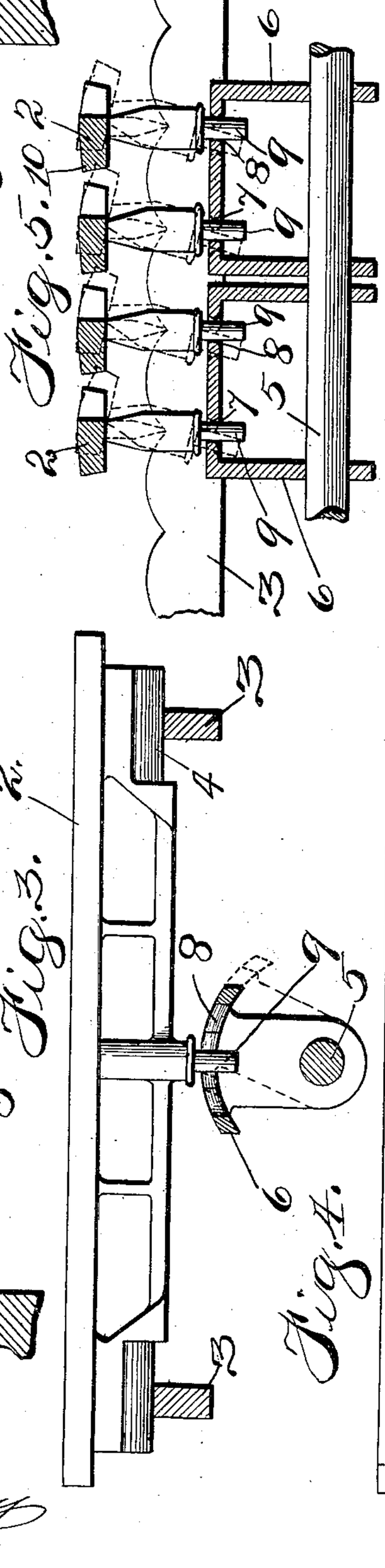

Fig. 5.

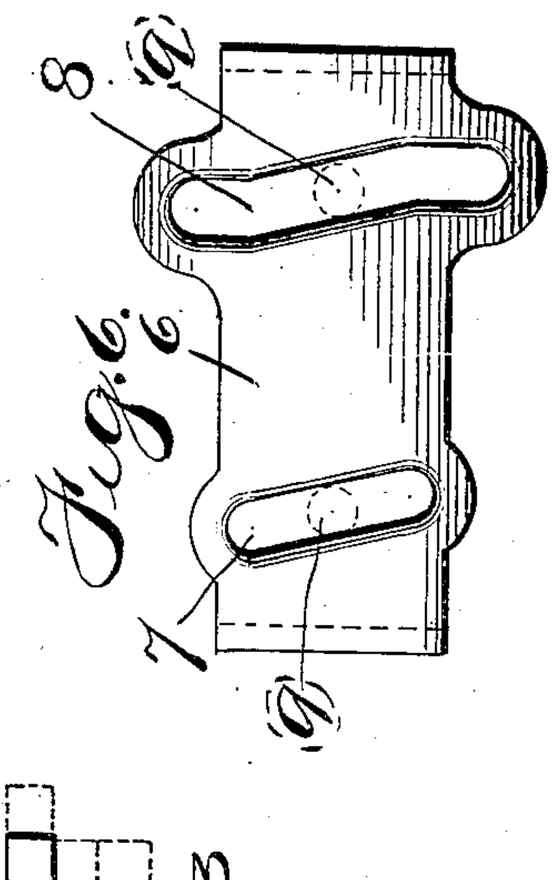

Fig. 6.

Fig. 3.

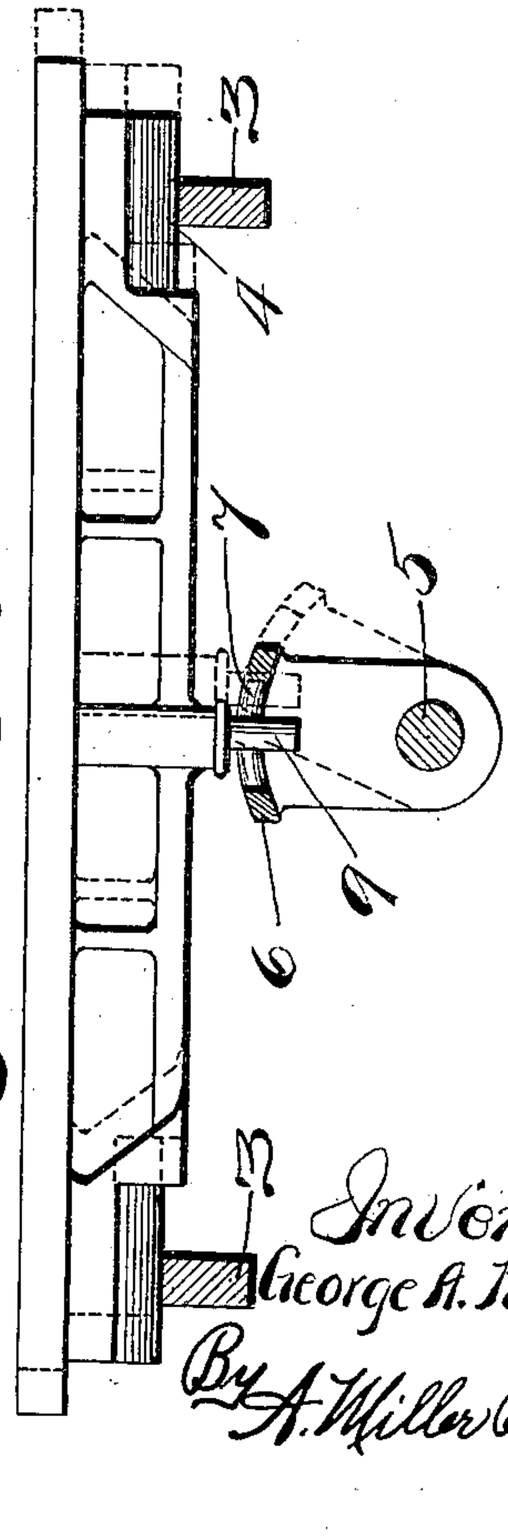

Fig. 4.

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UNITED STATES PATENT OFFICE.

GEORGE A. KOHOUT, OF CHICAGO, ILLINOIS.

FURNACE-GRATE.

No. 862,742. Specification of Letters Patent. Patented Aug. 6, 1907.

Application filed August 12, 1905. Serial No. 273,863.

To all whom it may concern:

Be it known that I, GEORGE A. KOHOUT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Furnace-Grates, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to grates for furnaces, and especially to means for rocking the grate bars to shake the grate.

Prominent objects of the invention are, to provide a simple, practical and inexpensive form of grate; to arrange for an effective and efficient shaking motion to secure a thorough action in operating the grate; and to accomplish the foregoing in a simple and expeditious manner.

In the accompanying drawings, Figure 1 is a plan of a grate arrangement embodying my invention showing the frame, the grate operating means and a grate bar; Fig. 2 is a cross-section of the same with a central portion being broken away; and Figs. 3, 4, 5 and 6 are views of details of construction, Figs. 3 and 4 each showing a grate bar engaging the operating means, Fig. 5 showing several grate bars in section with the operating means, and Fig. 6 showing a section of the rocking bar.

The grate shown in the drawings for carrying out my invention, comprises a body or bed 1 on which are shown three sets of grate bars 2, 2, 2. These grate bars are mounted upon transversely extending supports or bars 3, 3 which are desirably made with undulating upper surfaces. The grate bars are provided with knife edges 4, 4 at their ends which fit into the creases or depressions formed at the ends of the successive waves of the bars 3, 3. Below each set of grate bars is a transversely extending rock shaft 5 which is provided with a series of cams 6, 6, in the form of sleeves, each of which is provided with two slots or grooves 7 and 8. The grooves 7 are shorter than the grooves 8, and both of said grooves extend at an inclination across the axis of the shaft. The outer ends of the grooves 8, however, are straight,—that is at right angles to the shaft. The grate bars are provided with downwardly extending pins or projections 9, 9, which are adapted to fit and work in the grooves 7, 7 and 8, 8. Thus as the rock shafts 5, 5 are turned or rocked, the grate bars 2, 2 will be rocked or swung upon their knife edge bearings, back and forth so that their top surfaces are inclined first one way and then another. The grate bars actuated by the grooves 7, however, will also be shifted longitudinally after being rocked in one direction. This is due to the fact that the ends of the grooves 7, 7, will engage the pins 9, 9, and thereby shift the grate bars carrying said pins. The pins in the slots 8, 8, however, will not be so engaged, but will work in the straight end portions of the grooves 8, 8. Thus all of the grate bars will be rocked first one way and then another, and then every other bar will be shifted a slight distance longitudinally while the intermediate bars remain stationary. Then the bars will be rocked in the opposite direction and every other one shifted longitudinally in the opposite direction. Thus a complex rocking and longitudinal sliding movement of the grate bars is secured.

The grate bars 2, 2, can be of any suitable construction, but as a preferred arrangement they are constructed as shown in the drawings. In this arrangement they have projecting teeth 10, 10 which will be in register and out of register with one another according as the longitudinal shifting movement is brought about. As a preferred arrangement, the sides of the grooves 7, 7 and 8, 8 are made with curved edges where they engage the pins 9, 9, as shown in Fig. 5.

What I claim is:—

1. In a grate, the combination with the grate bars, of means for rocking the same, and also for shifting certain grate bars in a longitudinal direction relatively to other bars.

2. In a grate, the combination with the grate bars, of means for rocking the same, and means for shifting alternate grate bars longitudinally with reference to the intermediate bars.

3. In a grate, the combination with the grate bars, of rock shafts provided with means whereby the grate bars are rocked and also shifted longitudinally with reference to one another.

4. In a grate, the combination with the grate bars, of means for rocking a series of bars simultaneously and then shifting certain of said bars relatively to the others.

5. In a grate, the combination with the grate bars, of means for rocking said bars simultaneously and then shifting alternate bars longitudinally with reference to the intermediate bars.

6. In a grate, the combination with the grate bars provided with downwardly projecting pins, of rock shafts extending transversely of said grate bars, and having cams provided with transversely disposed inclined grooves, whereof alternate grooves are shorter than the intermediate ones, whereby the grate bars are rocked and the intermediate ones are shifted longitudinally as well.

In witness whereof, I hereunto subscribe my name this 9th day of August A. D., 1905.

GEORGE A. KOHOUT.

Witnesses:
I. C. LEE,
E. M. KLATCHER.