

No. 735,537.

PATENTED AUG. 4, 1903.

L. & S. LEHOTZKY.
FURNACE GRATE.

APPLICATION FILED OCT. 13, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

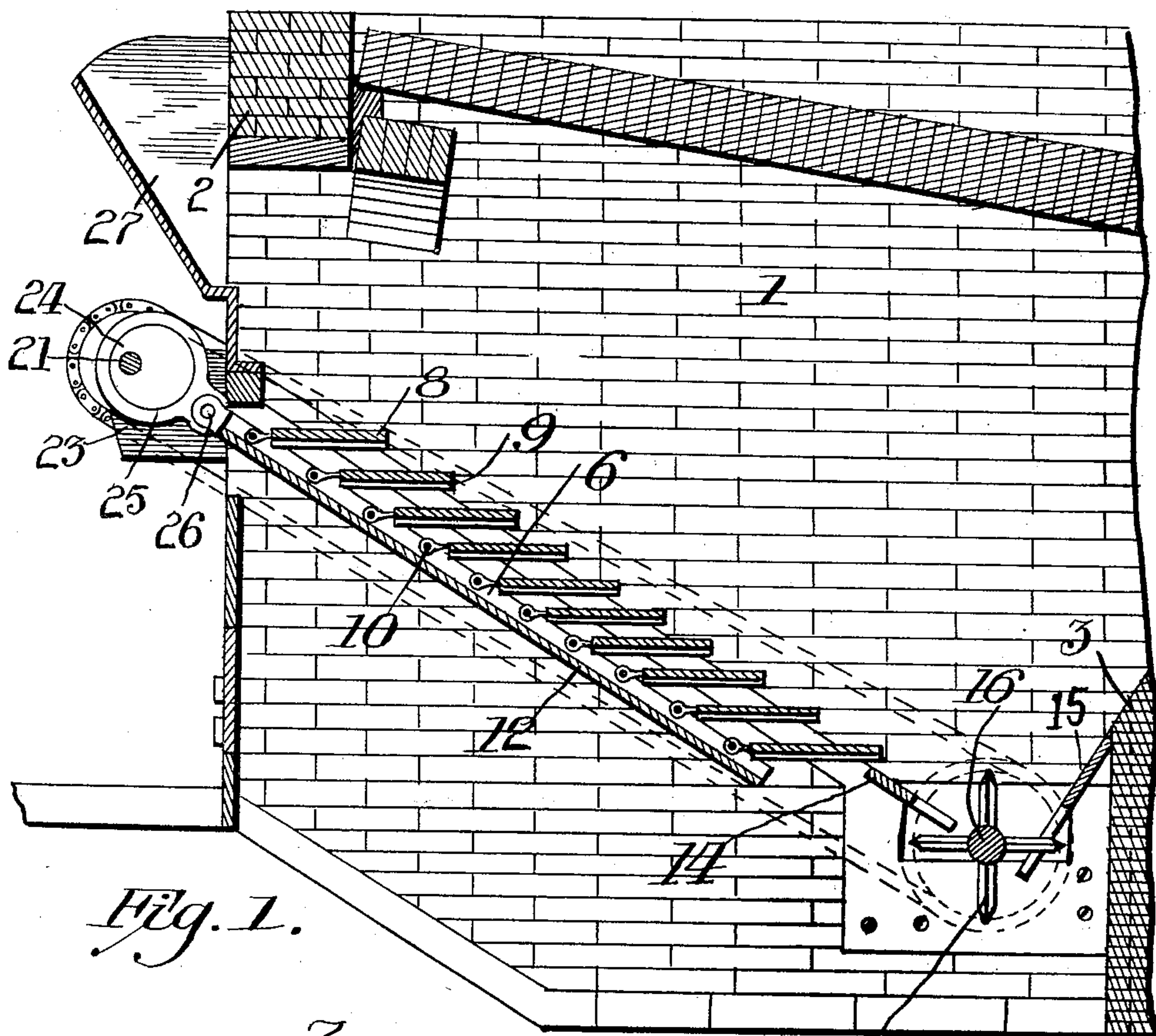


Fig. 1.

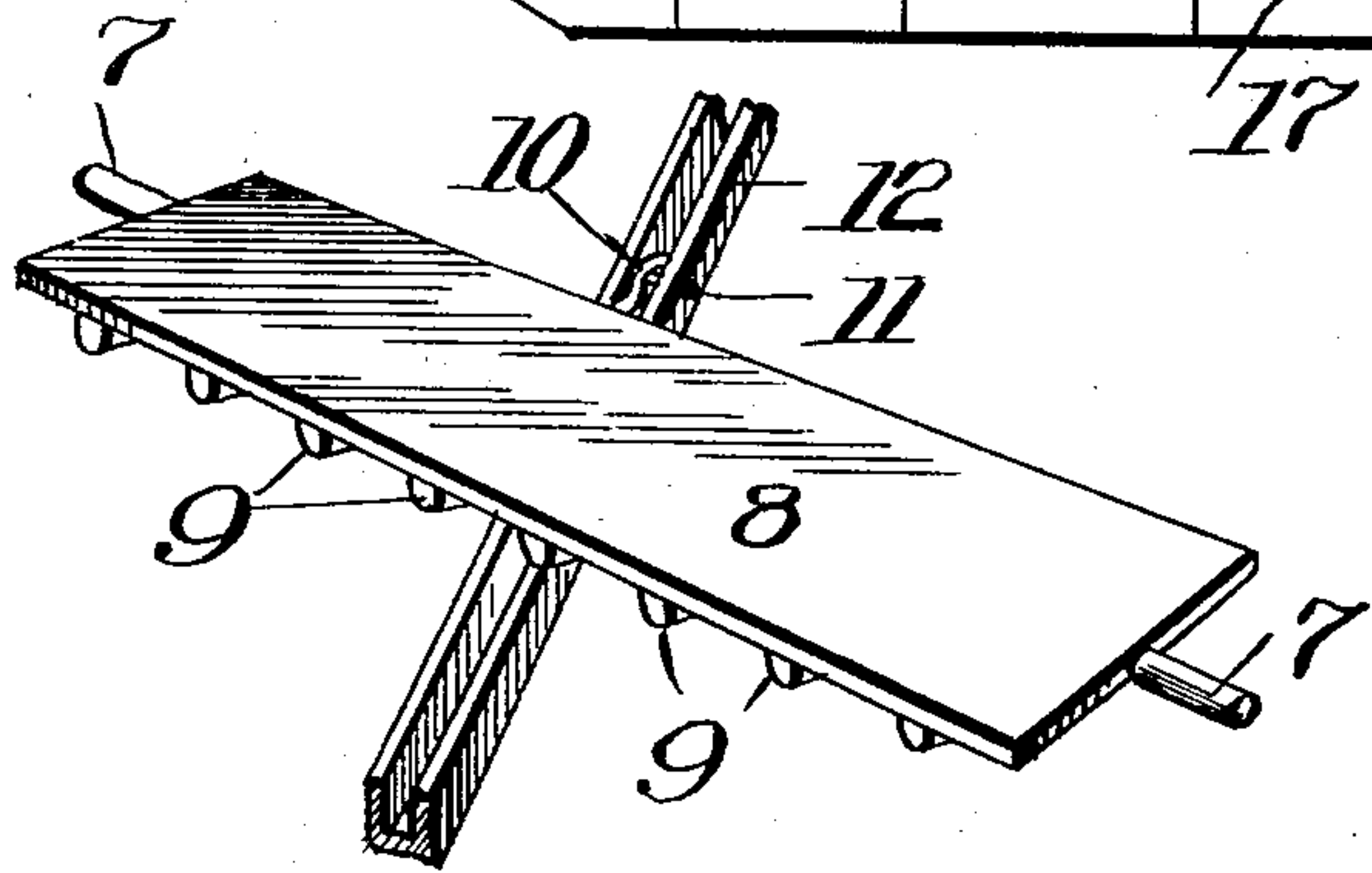


Fig. 2.

Witnesses:
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C. E. Potter.

By

Inventors:
Lorentz Lehotzky
Samuel Lehotzky
A. C. Everett & Co.
Attorneys.

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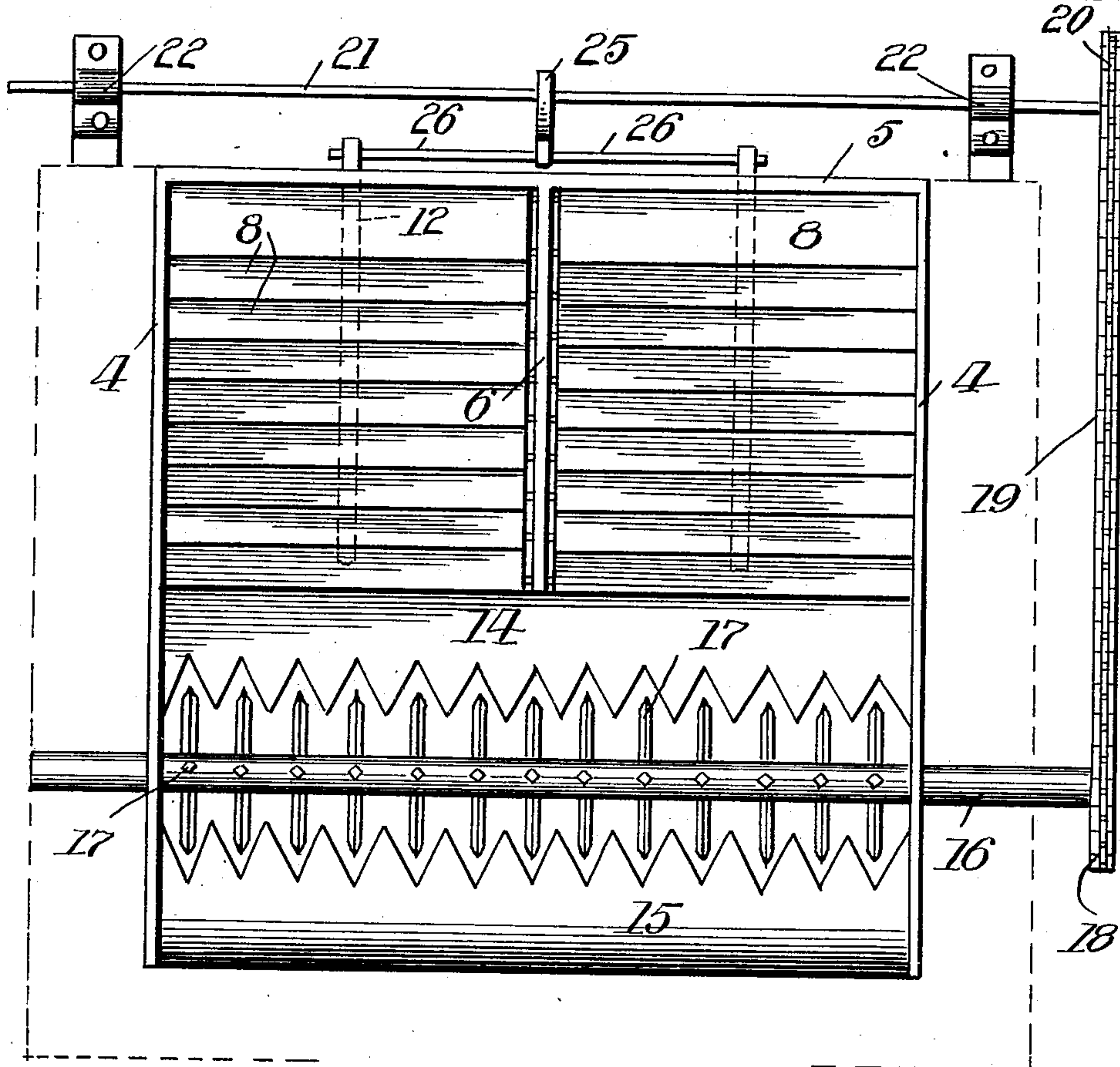


Fig. 3.

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UNITED STATES PATENT OFFICE.

LORENTZ LEHOTZKY AND SAMUEL LEHOTZKY, OF MCKEESPORT,
PENNSYLVANIA.

FURNACE-GRATE.

SPECIFICATION forming part of Letters Patent No. 735,537, dated August 4, 1903.

Application filed October 13, 1902. Serial No. 127,041. (No model.)

To all whom it may concern:

Be it known that we, LORENTZ LEHOTZKY and SAMUEL LEHOTZKY, citizens of the United States of America, residing at McKeesport, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Furnace-Grates, of which the following is a specification, reference being had therein to the accompanying
10 drawings.

This invention relates to certain new and useful improvements in furnace-grates, and has for its object the provision of novel means for the rack-bars of the grate to im-
15 part thereto a continuous movement.

A further object of the invention is to provide a novel form of cleaner whereby the fire at the lower end of the grate is kept in good condition.

20 The invention relates particularly to that class of devices known as "automatic" stokers in which the grate-bars are actuated so as to continually agitate the bed of the fire, and our invention, as stated, resides in the form
25 of the grate-bars and mechanism for actuating the same, together with a cleaner at the bottom of the grate-bars or pit of the furnace.

In describing the invention in detail reference is had to the accompanying drawings,
30 forming a part of this specification, and wherein like numerals of reference indicate like parts throughout the several views, in which—

Figure 1 is a central sectional view from
35 front to rear of a part of a steam-boiler furnace provided with a grate constructed in accordance with our invention. Fig. 2 is a detail perspective view of one of the grate-bars and a part of the actuating-bar. Fig. 3 is a plan
40 view of the grate.

Our improved grate is of that type in which the grate is at an angle in the furnace and in which the coal is automatically fed to the furnace.

45 In the accompanying drawings, 1 indicates the side walls of the fire-box, 2 the front wall thereof, and 3 the rear or bridge wall.

The grate comprises a frame embodying the side bars 4, top bar 5, and intermediate
50 bar 6. This latter bar is perforated on its

two upper edges and is provided with seats to receive the pin 7 on one end of the grate-bars 8, the pin 7 on the other end of these grate-bars being seated in the side bars 4 of the frame. Each of these grate-bars is provided
55 on its underneath face with ridges 9, and each grate-bar carries an integral eye 10, the several eyes 10 being connected to pins 11, carried by the actuating-bar 12, one of which is provided for each set of grate-bars, as shown in dotted
60 lines in Fig. 3 of the drawings. Directly below the grate-bars is provided a notched plate 14, and at the bottom of the frame for the grate-bars is a like plate 15, and journaled in the U-shaped extensions of the side bars 4 of
65 the frame, between the plates 14 and 15, is a cleaner comprising a shaft 16, provided with a series of teeth 17, having sharp edges on four different sides thereof, which teeth operate between the teeth of the plates 14 and
70 15. The shaft 16 is provided on one end with a sprocket-wheel 18, and a chain 19 passes over this wheel and over the wheel 20, carried on one end of the shaft 21, journaled in suitable bearings 22, which may be mounted
75 on brackets 23, secured to the front of the furnace in any suitable manner. This shaft 21 has mounted thereon in line with the actuating-bar 12 an eccentric 24, the strap 25 of which is connected to the rod 26, attached
80 at its ends to the two actuating-bars 12. The coal is fed into the furnace through a suitable hopper 27 in the usual manner. The shaft 21 is driven by any suitable power, and it will be observed that as the coal falls by
85 gravity to the grate-bars from the hopper 27 these grate-bars will be continually vibrated, due to the rotation of the shaft 21, actuating the bars through the medium of the bars 12, connecting-rod 26, and eccentric 24. Like
90 wise the cleaner at the bottom of the grate is in continual operation during the time the grate-bars are being operated, so that the fire is effectually cleaned of cinders, clinkers, and the like at all times.

95 Attention is directed to the fact that by reason of the ridges 9 on the bottom of the grate-bars the grate-bars are at no time during their operating lying one upon the other, and consequently there is a free circulation
100

of air at all times from beneath the grate-bars through between the same and the bed of the fire, thereby materially increasing the combustion. Attention is also directed to
5 the fact that each grate-bar is independently removable. In case one of the grate-bars is damaged or is burned out the pin 11 thereof, connecting the same to the actuating-bar 12,
10 may be removed and the damaged grate-bar replaced by a new one without disturbing any of the other bars.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

15 In a grate of the type set forth, a frame comprising side top and end bars and an intermediate bar all formed integral, said intermediate bar being formed on its opposite

sides with seats, a plurality of grate-bars pivoted on each side of the said intermediate 20 bar and having their opposite ends journaled in the seats of the said intermediate bar, and seats in the said side bars, channel-bars arranged beneath the respective series of grate-bars, an integral eye carried by each grate- 25 bar and extending into the said channel-bars, removable pins passing through the said channel-bars and eyes, and means for oscillating the said channel-bars.

In testimony whereof we affix our signatures in the presence of two witnesses. 30

LORENTZ LEHOTZKY.
SAMUEL LEHOTZKY.

Witnesses:

JAS. V. MCMASTER,
A. M. WILSON.