No. 607,969. Patented July 26, 1898.

H. A. TINKHAM.

GRATE BAR HANGER AND CONNECTIONS.

(Application filed Nov. 8, 1897.)

(No Model.) 2 Sheets—Sheet 1.

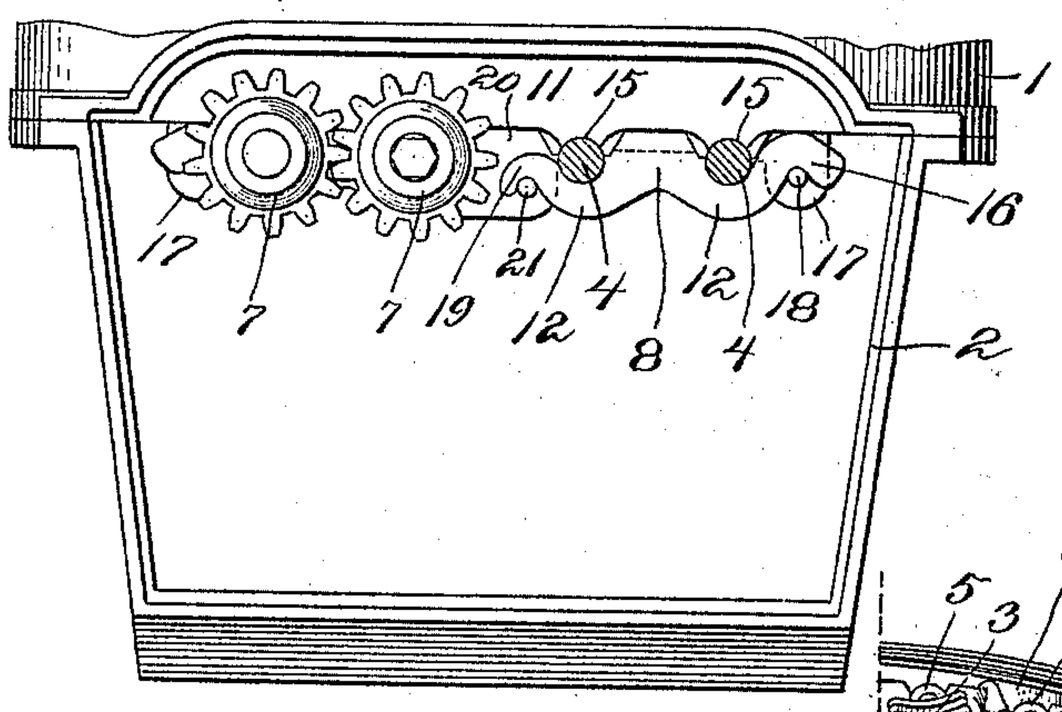


Fig. 1.

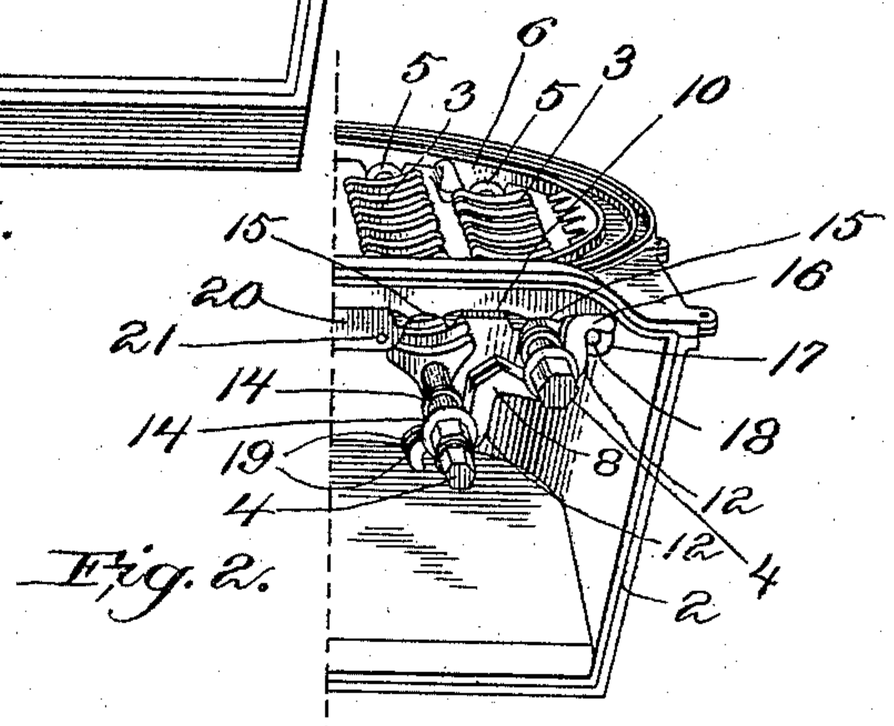


Fig. 2.

Fig. 3.

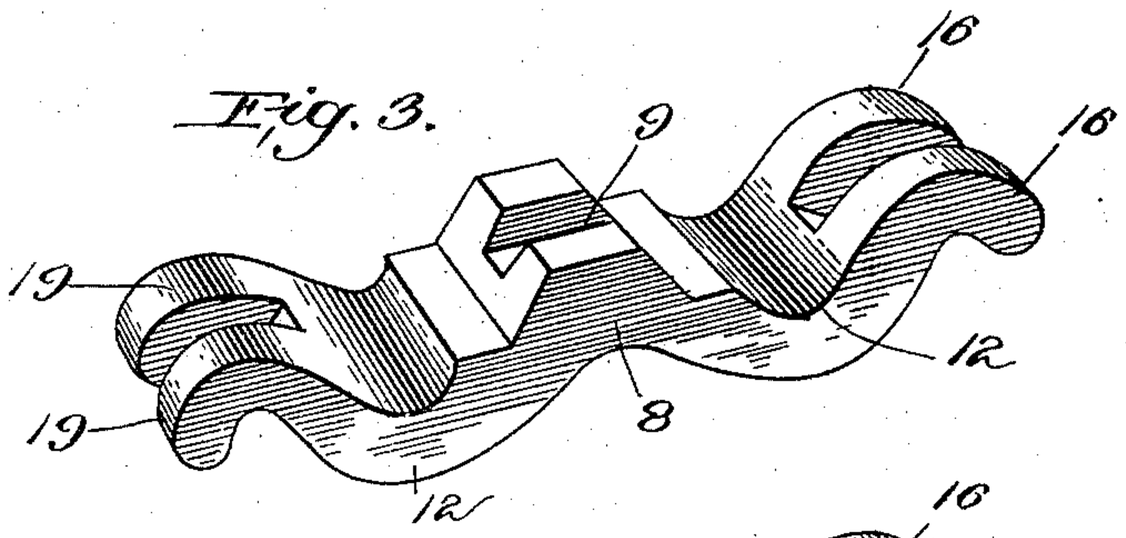
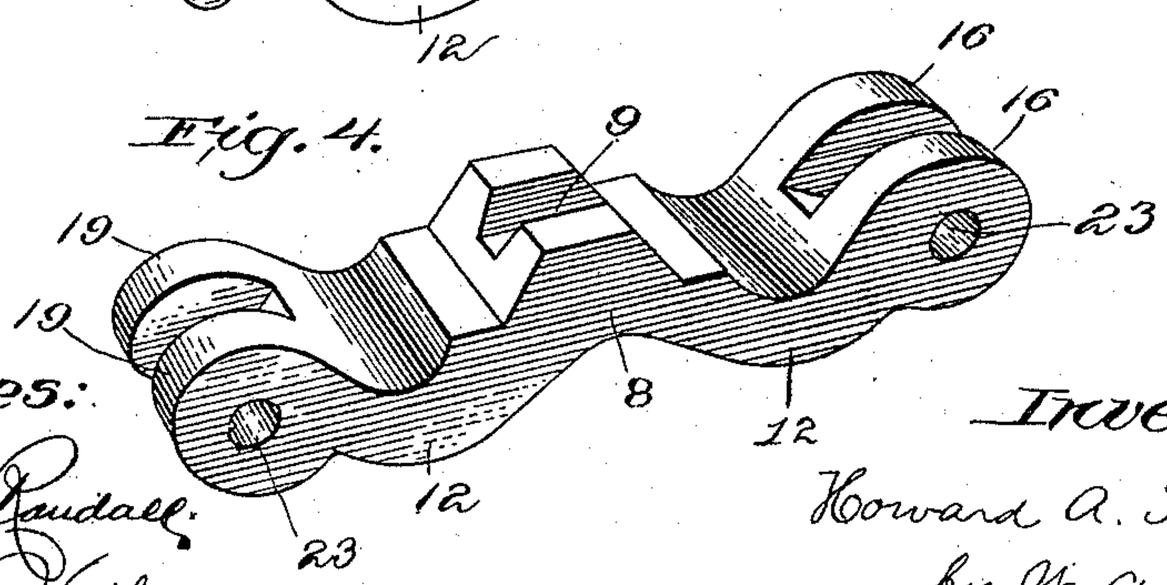


Fig. 4.



Witnesses:
Arthur D. Randall.
Robert Wallace.

Inventor:
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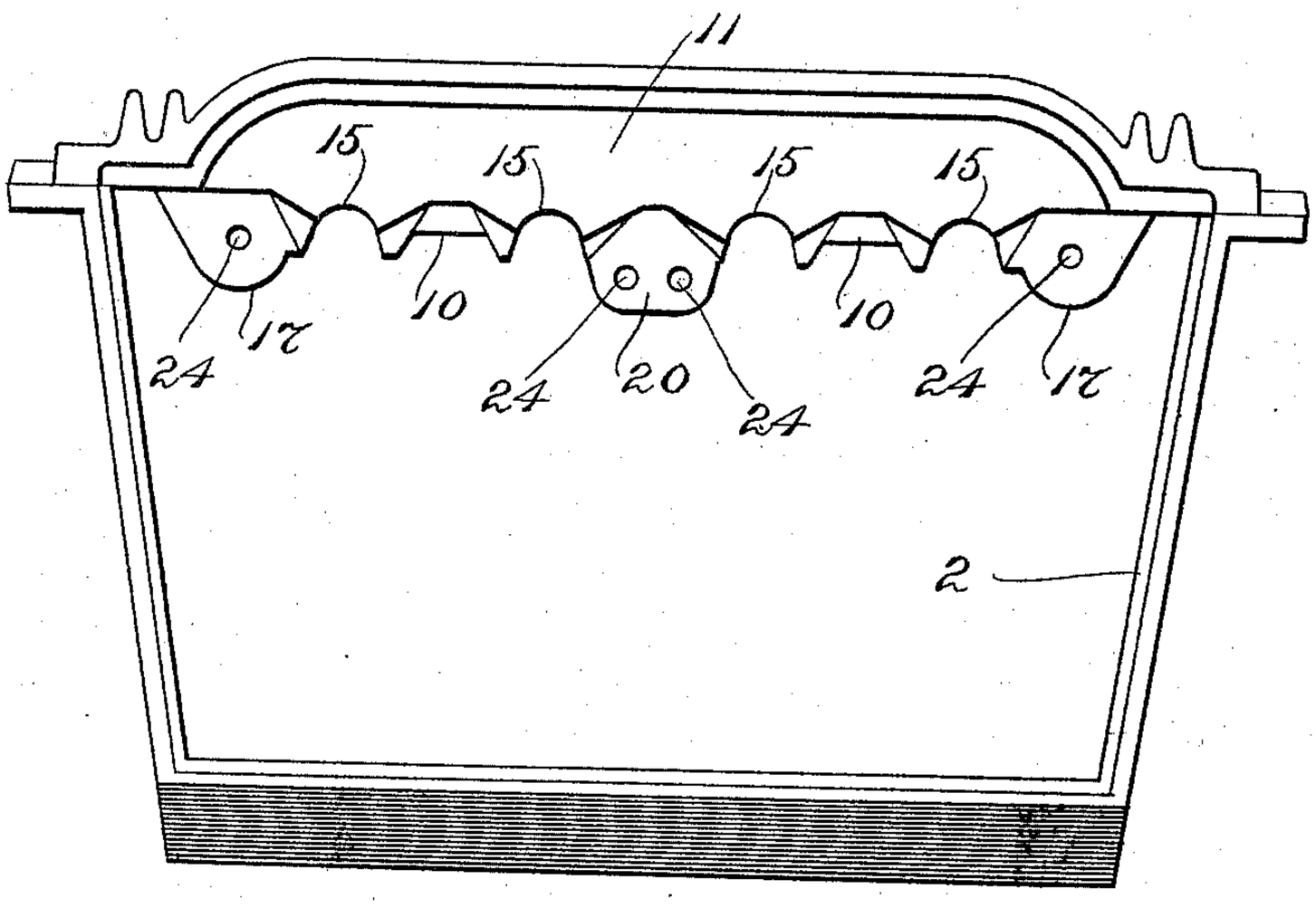

Fig. 5.

Witnesses:
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UNITED STATES PATENT OFFICE.

HOWARD A. TINKHAM, OF NORTON, MASSACHUSETTS, ASSIGNOR TO THE WHITE WARNER COMPANY, OF TAUNTON, MASSACHUSETTS.

GRATE-BAR HANGER AND CONNECTIONS.

SPECIFICATION forming part of Letters Patent No. 607,969, dated July 26, 1898.

Application filed November 8, 1897. Serial No. 657,747. (No model.)

To all whom it may concern:

Be it known that I, HOWARD A. TINKHAM, a citizen of the United States, residing at Norton, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Grate-Bar Hangers and Connections, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to provide a grate-bar hanger and connections whereby the grates are readily hung in position and when desired any of the grates may be easily and quickly removed and replaced without dumping the fire.

The novel features of my invention will be fully described in the specification, and particularly pointed out in the claims at the end thereof.

In the drawings, Figure 1 is a front elevation of the ash-pit of a furnace with the front removed, showing my grate-hangers applied to a double set of grates, the cog-wheels of one set removed and the grate-bars shown in section. Fig. 2 is a perspective, partly broken away, showing one set of grates and the hanger dropped down into its lowest position to remove the grate. Fig. 3 is a perspective of the grate-hanger detached. Fig. 4 is a perspective of a modified form of grate-hanger. Fig. 5 is a front elevation similar to Fig. 1, but with the cogs, grates, and hangers all removed, so as to show more clearly the tongues on the bed-plate.

1 is the combustion-dome of a hot-air furnace broken away, and 2 the ash-pit. The grate is formed with grate-bars 4 4, which at their inner ends are journaled in bearings 5 in the side of the base-ring 6. The cog-wheels 7 are shown on one pair of the grate-bars and are omitted from the other pair for greater clearness of illustration.

The hanger illustrated in the drawings has a middle section 8, which has a groove 9, so that when the hanger is set up in place the groove 9 will receive the tongue 10, which extends down from the bed-plate 11 of the ash-pit. Extending from the middle section 8 toward each end of the hanger the bar is formed with a downwardly-curved bow 12, crosswise of which lie the grate-bars 4, the grate-bars having thereon two bosses 14, between which the grate-bar rests on the hanger, the bosses preventing endwise slipping of the grate-bars. Complementary to the curved portions 12 of the hanger are the curved notches 15 in the bed-plate 11, which form, together with said curved portions 12, journal-holes for the grate-bars, so that the grate-bars may be turned or rocked on their axes. The hanger is opened or divided at each end, the bent portions 16 and 19 forming hook-fingers. The fingers 16 on the right-hand end receive the tongue 17, which projects down from the bed-plate 11, and they rest on the pin 18, which passes through a hole 24 drilled in said tongue. The fingers 19 on the left-hand end of the hanger receive the tongue 20 and hook over the pin 21, which passes through a hole 24 drilled in said tongue.

In order to insert the grate, one of the pins, as 18, is inserted in the hole 24, already drilled in the tongue 17, the fingers 16 are hooked over the said pin, the grate-bars are placed with their inner ends in their inside end bearings 5, and the outer ends are lowered, so that the bar rests in the curved bearings 12 of the hanger. The hanger is then raised, the groove 9 receiving the tongue 10 and the fingers 19 receiving the tongue 20. The pin 21 is then inserted through the hole in tongue 20, and the cog-wheels 7 are put on the ends of the grate-bars. The tongues aid in preventing lateral displacement of the hanger.

To remove the grates, one of the cog-wheels is removed, the pin 21 is withdrawn, the end of the hanger is lowered, and the grate bar or bars pulled out. Either end of the hanger may be lowered first by taking out the proper pin. Each set of grates is independent of the other. Either one of the center grates can be removed and replaced without dumping the fire. The tongue 20 has two holes to receive pivot-pins for two hangers.

Although I prefer to have the hanger made with a hook at each end, so that the entire hanger may be detached, it may be made with a hook at one end and with a pin-hole through the other end, so that a pin can be inserted in the holes as a pivot, or instead of a hook at either end there might be a pin-

hole 23 at each end for the pivot-pin, as shown in the modification, Fig. 4, and if one or both of the pins is removable the hanger can be lowered by taking out the pin, as already described.

What I claim as my invention is—

1. A grate-bar hanger consisting of a bar having a middle portion grooved on its upper edge, concave portions at each end of the middle portion forming bearings for the grate-bars, and end portions with pivot-bearings, in combination with a bed-plate having a tongue which fits in the groove of the hanger, and notches complementary to the bearing portions of the hanger, substantially as described.

2. A grate-bar hanger consisting of a bar having a middle portion grooved in its upper edge, a concave portion at each end of the middle portion to receive the grate-bars and divided end portions which form fingers, in combination with a set of grates and a bed-plate having a tongue which fits in the groove of the hanger, curved notches complementary to the curved bearing portions of the hanger, tongues which pass between the fingers of the hanger and have pin-holes therein, and pins which pass through said holes and support the hanger, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 5th day of November, A. D. 1897.

HOWARD A. TINKHAM.

Witnesses:

WILLIAM A. COPELAND,

EDITH J. ANDERSON.