Jan. 2, 1923.

1,440,728.

E. FITTS.

STOKER.

FILED MAY 4, 1918.

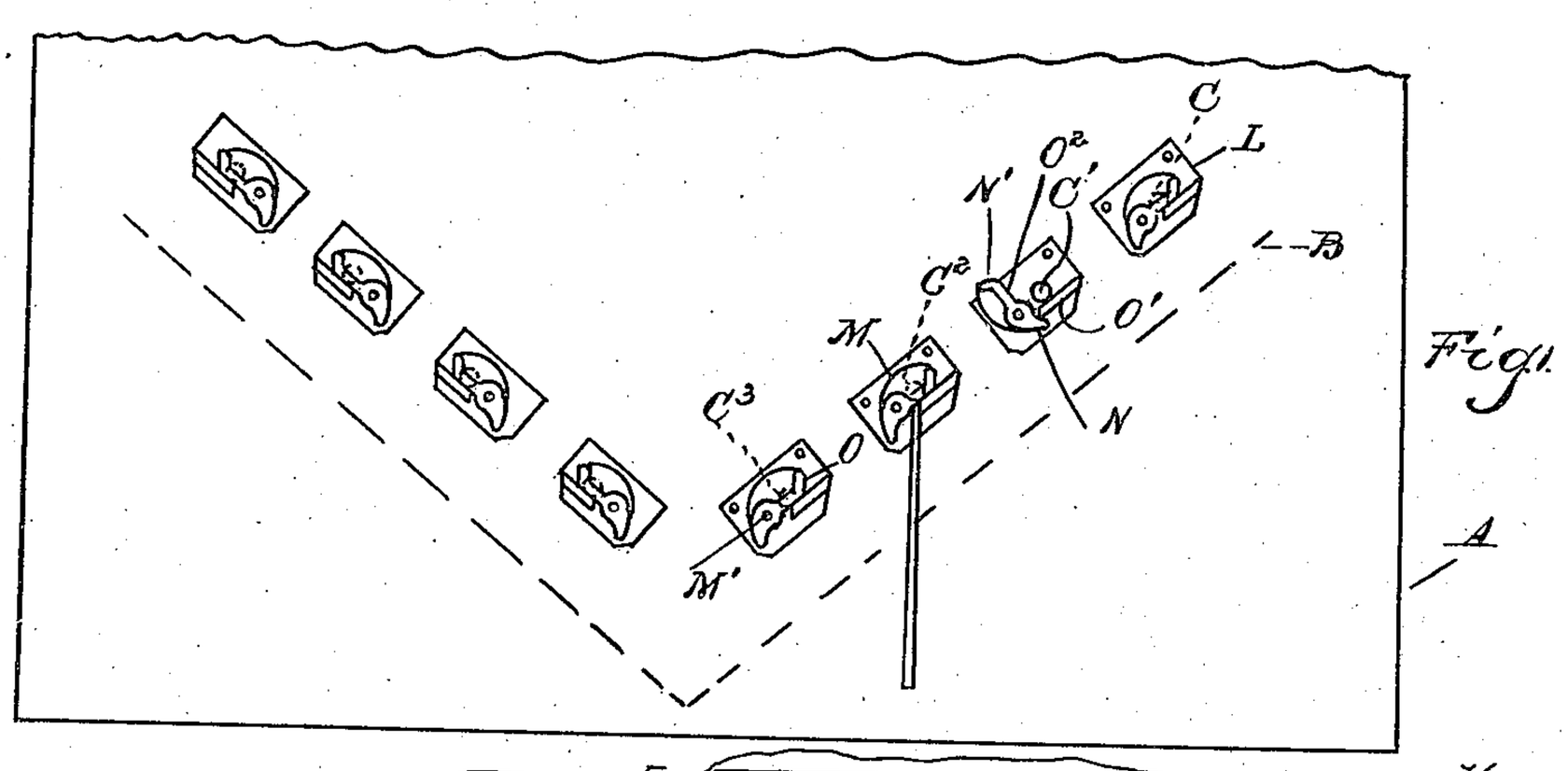

Fig. 1.

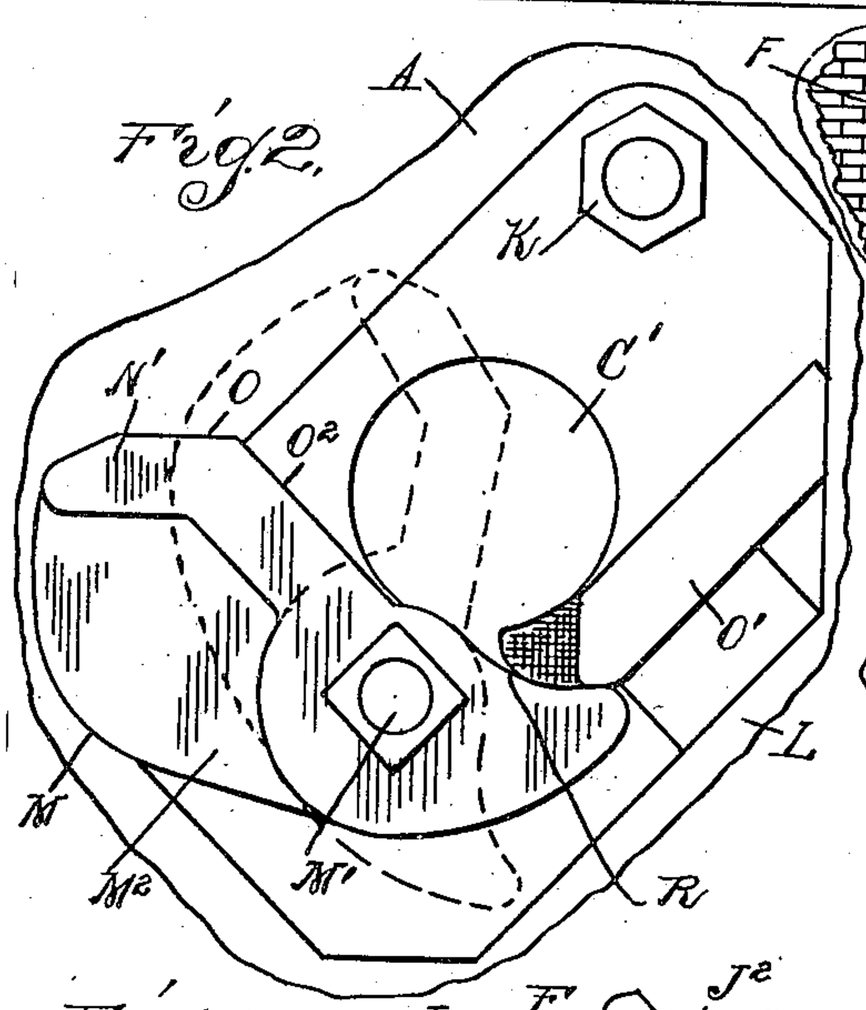

Fig. 2.

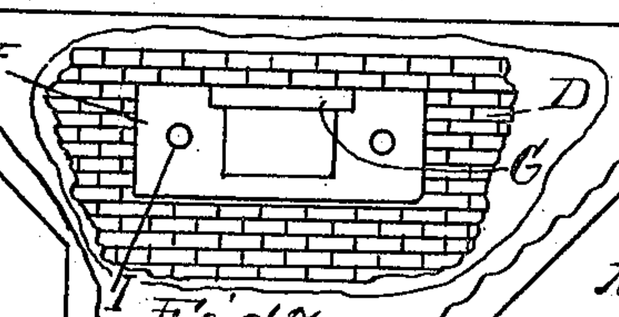

Fig. 7.

Fig. 3.

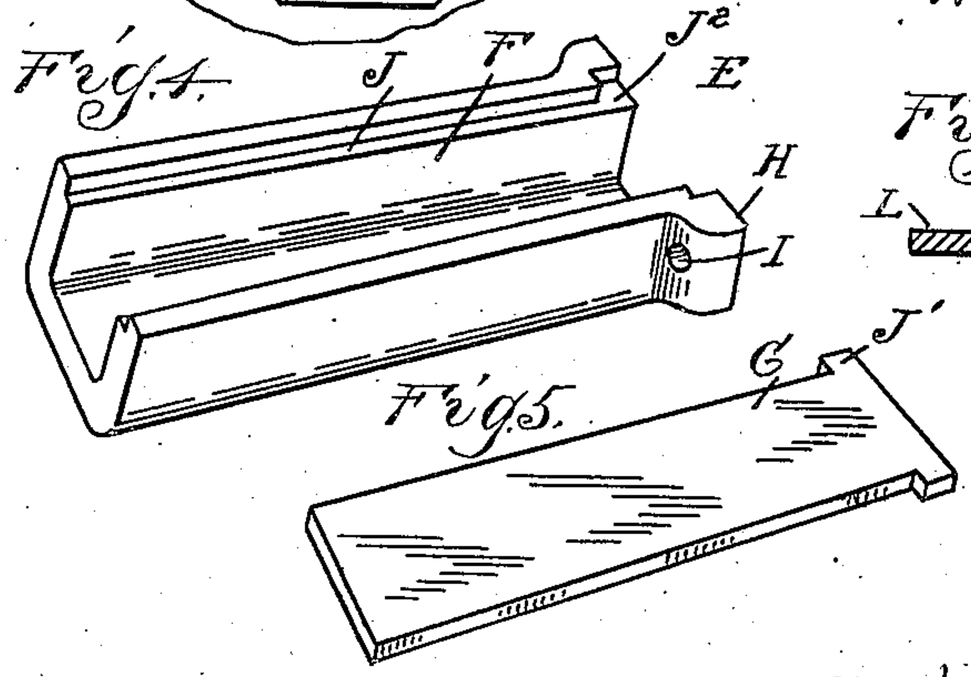

Fig. 4.

Fig. 5.

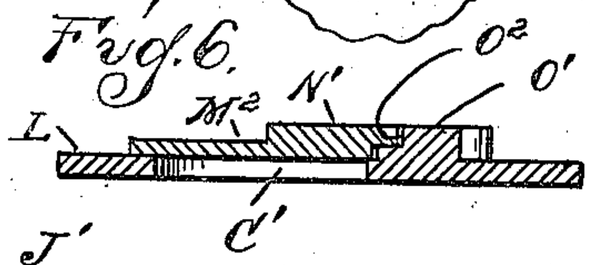

Fig. 6.

Inventor

Edwin Fitts

By Whittemore Hulbert & Whittemore

Attorney

Patented Jan. 2, 1923. 1,440,728

UNITED STATES PATENT OFFICE.

EDWIN FITTS, OF DETROIT, MICHIGAN, ASSIGNOR TO DETROIT STOKER COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

STOKER.

Application filed May 4, 1918. Serial No. 232,431.

To all whom it may concern:

Be it known that I, EDWIN FITTS, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Stokers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to furnace construction and refers more particularly to a new and improved means for closing the slice-bar openings or like openings and also to a new and improved housing forming the passageway for the slice-bar opening or like opening through the furnace setting.

Another object of the invention is to provide a closure for the slice-bar openings or like openings which is so arranged as to facilitate the opening and closing of the closure and to permit the insertion of the slice-bar being utilized for moving the closure to and from its closed position.

The invention also resides in the balanced arrangement of the cover for the slice-bar opening or like opening and in such further details of construction and arrangements and combinations of parts as will more fully hereinafter appear.

In the drawings:

Figure 1 is a front elevational view of a furnace front plate equipped with my invention;

Figure 2 is a fragmentary front elevational view showing the closure in different positions of adjustment;

Figure 3 is an enlarged detail view of the closure;

Figure 4 is a perspective view of the housing with the cover removed;

Figure 5 is a perspective view of the housing cover;

Figure 6 is a cross-section through the closure on line 6—6 of Figure 3;

Figure 7 is a front elevational view of the closure in place on the furnace.

Describing in detail the particular embodiment of my invention shown in the drawings and referring first to the general arrangement of parts shown in Figure 1, A designates the front plate of a furnace having inclined grates B; and C, C′, etc. designate a series of openings through which the slice-bar or other member is inserted for poking the fuel. As these openings project through brick work D it is necessary to provide a cast iron or other suitable housing E which in the present construction is formed of a main body section F having parallel side walls and adapted to receive a cover member G. At its forward end the main body portion F of the housing is provided with transverse lugs H having bolt holes I by means of which it can be clamped to the front plate. The cover section G rests in grooves J which converge in the direction toward the front of the furnace, and is provided at its front end with ears J′ which fit into recesses J² in the front end of the main body portions F. The cover section is tapered from the back toward the front, the arrangement of parts being such that when the cover section is placed into the recesses J² it will be locked from relative endwise movement while the parts of the housing will be readily detachable in case of removal for repair or renewal.

The bolt holes I at the forward end of the housing are also utilized for receiving the bolts K which project through openings in the castings L which carry the closures M for the slice-bar openings. These members L are preferably formed permanently in the metal sections which form the front plate of the furnace. Each of the castings L has pivotally connected thereto at M′ the closure M which has a flat portion M² fitting over the openings such as C, C′, etc. in the closed position. In addition to the flat part which closes the opening the pivoted members M are provided with lug portions N and N′ which are preferably of the shape shown in detail in Figure 3. The upper lug N′ has a bevelled portion O extending away from the stop O′ formed on the stationary member or casting L. It also has a shoulder O² which abuts against this lug in the closed position of the parts, the weight of the upper lug N′ being sufficient to hold the shoulder O² against the lug O′ when the member M is rocked to its closed position.

In use when the operator desires to gain access to the furnace chamber through the slice-bar openings, he lets the end of his slice-bar drop into the V-shaped opening between the inclined surface O of the lug N′ and the side wall of the stationary lug O′. This will force the lug N′ toward the left and swing it beyond its center to the position shown in Figure 2. After poking the fire

through this opening the slice-bar is withdrawn. If in removing the slice-bar its end Q′ is allowed to be drawn across the edge R of the lug N it will force the lug N downward and tip the closure beyond the center so as to swing it back to its original closed position.

The movement of inserting and withdrawing the slice-bar is thereby utilized for swinging the closure toward and from its closed position, thus greatly facilitating the operation of poking the fuel on the grates. Also the closure is so balanced by the lugs N and N′ that when swung beyond its dead center to either open or closed position it will remain in such position.

While I have shown and described the invention in connection with the poking of fuel on the grates it is obvious that it is equally applicable to similar use in connection with stokers or other feeding mechanisms, and I do not desire to limit it to the particular use or mode of operation described nor to the particular details of construction except as ultimately set forth in the claims.

What I claim as my invention is:—

1. The combination with a wall having a slice-bar opening or like opening, of a stationary stop, a pivoted closure for said opening, said closure having a lug arranged to normally hold the closure in its closed position by gravity, said lug cooperating with the stationary stop and having a surface relatively inclined with relation to the stop to form therewith a V-shaped entrance engageable in by a suitable tool for facilitating the opening movement of the closure.

2. The combination with a wall having a slice-bar opening or like opening, of a stationary stop, a pivoted closure for said opening, said closure having a lug arranged to normally hold the closure in its closed position by gravity, said lug cooperating with the stationary stop and having a surface relatively inclined with relation to the stop to form a wedge-shaped entrance engageable in by the slice-bar member for facilitating the opening movement of the closure, and a second lug having a portion engageable by the slice-bar member as the latter is withdrawn from the opening for assisting the closure in returning to its closed position.

3. The combination with a wall, of a housing extending therethrough forming a slice-bar opening or like opening, a closure for said opening and a member on which said closure is pivotally mounted in fixed relation to said housing, said housing having a main body portion and a cover section having an interlocking engagement with said main housing portion.

4. The combination with a furnace wall or the like, having a slice-bar opening or like opening, of a housing for the opening comprising a main body portion having substantially parallel side walls provided with recesses in advance of their rear ends, and a cover section adapted to interlock with the main body portion and having ears engaging the recesses for holding said cover section and main body portion in fixed relation in the assembled position.

5. The combination with a wall having a slice-bar opening or like opening of a pivoted closure for said opening, actuated by gravity to remain in either its closed or open position, means upon said closure for facilitating the opening movement thereof by the slice-bar, and means upon said closure and arranged below said opening when said closure is in open position in the normal path of travel of the slice-bar when the latter is withdrawn from said opening whereby closing movement of said closure is facilitated.

6. The combination with a furnace wall or the like, provided with an opening therethrough, of a housing extending through said opening and comprising a main body portion having transverse lugs and a cover section upon said main body portion, a metal section having a hole therein, bolts engaging said transverse lugs and extending through said wall and metal section for securing the same together, and a closure for the hole in said metal section, and means upon said closure for facilitating the opening and closing of the hole by the tool adapted to pass therethrough.

In testimony whereof I affix my signature.

EDWIN FITTS.