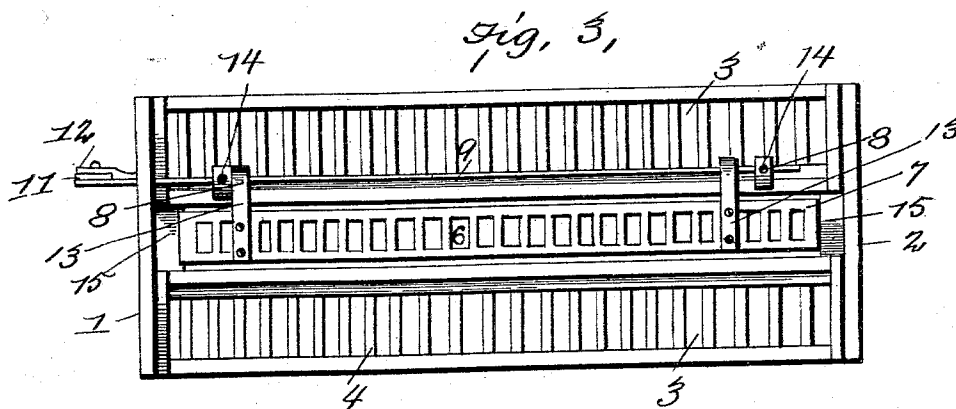
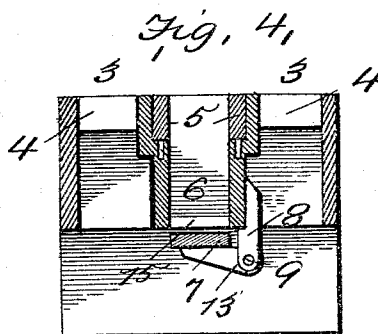
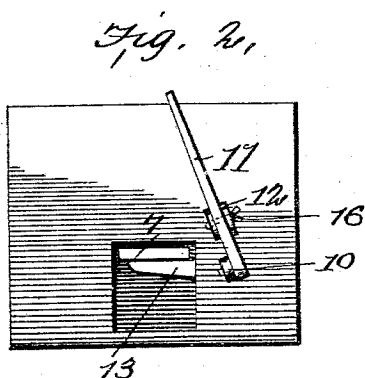
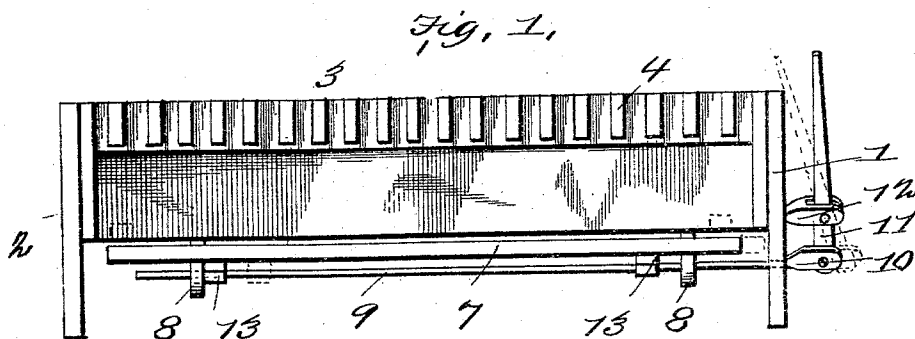


(No Model.)

E. FALES.  
FURNACE OR STOVE GRATE.

No. 551,270.

Patented Dec. 10, 1895.



WITNESSES-

*W. Johnson,*  
*Morris Price,*

INVENTOR,

*Edward Fales*

*By J. R. Nottingham atty.*

# UNITED STATES PATENT OFFICE.

EDWARD FALES, OF WINTHROP, MASSACHUSETTS.

## FURNACE OR STOVE GRATE.

SPECIFICATION forming part of Letters Patent No. 551,270, dated December 10, 1895.

Application filed August 10, 1895. Serial No. 558,926. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD FALES, a citizen of the United States, residing at Wintthrop, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Furnace or Stove Grates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to certain new and useful improvements in furnace or stove grates, more particularly to that class technically known as "pocket-grates;" and the principal object is to provide a simple and effective means whereby the bottom or movable section of the grate is maintained in proper position for use, and while in such position can be readily shaken, said means also allowing for the easy dumping of the movable section.

The invention consists in attaching the movable section of the grate, at one side, to a rod journaled in suitable bearings and having one end projecting through the wall of the furnace or stove, said end being pivoted to one end of a detachably-fulcrumed operating-lever; and it further consists in the combination and arrangement of the various parts, as will be hereinafter more fully explained, and specifically set forth in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a furnace pocket-grate with side of grate removed, showing my improvements applied thereto; Fig. 2, a front elevation of the same; Fig. 3, a bottom plan view, and Fig. 4 a transverse vertical sectional view.

Referring to the drawings, the numerals 1 and 2 indicate respectively the front and back plates of the grate, and 3 the upper grate-bar sections, which consist of a rectangular oblong frame having parallel imperforate side and end walls and an open bottom. The top of each frame is provided with a series of transverse bars 4, cast integral with said frame, and the inner upper side edge is preferably formed with longitudinal rabbets, in which are seated strips or slabs of refractory material 5, held in place by any well-known means. The grate-bar sections are bolted, at

their ends, between the front and back plates in such manner that their upper surface will be flush with the upper edges of said plates and their outer side walls flush with the ends of said plates, leaving a space between their inner side walls to form a pocket 6, below which is the movable grate-bar section 7, which constitutes the bottom of the pocket.

As thus far described, the invention is the same as that described in an application filed by me June 12, 1895, Serial No. 552,536, and forms no part of the invention sought to be claimed herein.

The numeral 8 indicates two depending brackets which are secured to the inner side of one of the grate-bar sections, and 9 indicates a reciprocating rod journaled in said brackets. This rod passes through a perforation made in the front plate of the furnace and is provided with a flat elongated head 10, to which is pivoted one end of a lever 11, fulcrumed in the bifurcated end of a stud 12, which is secured to the front plate. The movable grate-bar section is secured to the reciprocating rod 9 by means of arms 13, which are bored to receive said rod, rivets 14, or their equivalents, being employed to secure rigid attachment between the arms and rod.

The numeral 15 indicates a ledge which extends from the inner side of the front and back plate, respectively, into the pocket just above the respective ends of the movable grate-bar section, and serves to prevent pieces of coal and cinders getting between the ends of said section and the front and back plates and thereby interfering with the free manipulation of the movable grate-bar section.

The shaking of the grate is accomplished by moving the operating-lever to and fro, and the dumping is accomplished by withdrawing the fulcrum-pin 16 and pulling the lever out of the bifurcated end of the stud 12. The movable grate-bar section being securely attached to the reciprocating rod it will be evident that when the rod is reciprocated by the lever said section will receive a longitudinal reciprocatory movement, and the rod being journaled loosely in its bearings it will also be evident that when the lever is moved from its fulcrum 12 the unconfined side of the section will swing downward and thus be dumped.

It will be apparent that my improvements may be applied to flat grates as well as to pocket-grates and to grates with any number of pockets, and I therefore do not wish to be understood as limiting myself to any particular form of grates.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a grate-section, of a shaft or rod rigidly secured to one side thereof, bearings for said shaft in which it may turn and slide, and an operating-handle pivoted at one end to the shaft and detachably secured to a fulcrum at a point between its ends, whereby said section is held in normal position, reciprocated, dumped and re-

turned to normal position, substantially as specified.

2. The combination, with a pocket-grate, of a grate-section below the pocket of the grate, a shaft rigidly secured to one side of said section, bearings for said shaft in which it may turn and slide and an operating-handle pivoted at one end to the shaft and detachably secured at a point between its ends, substantially as specified.

In testimony whereof I affix my signature in the presence of two witnesses.

EDWARD FALES.

Witnesses:

FRANK G. TAYLOR,  
THOS. S. HARLOW.