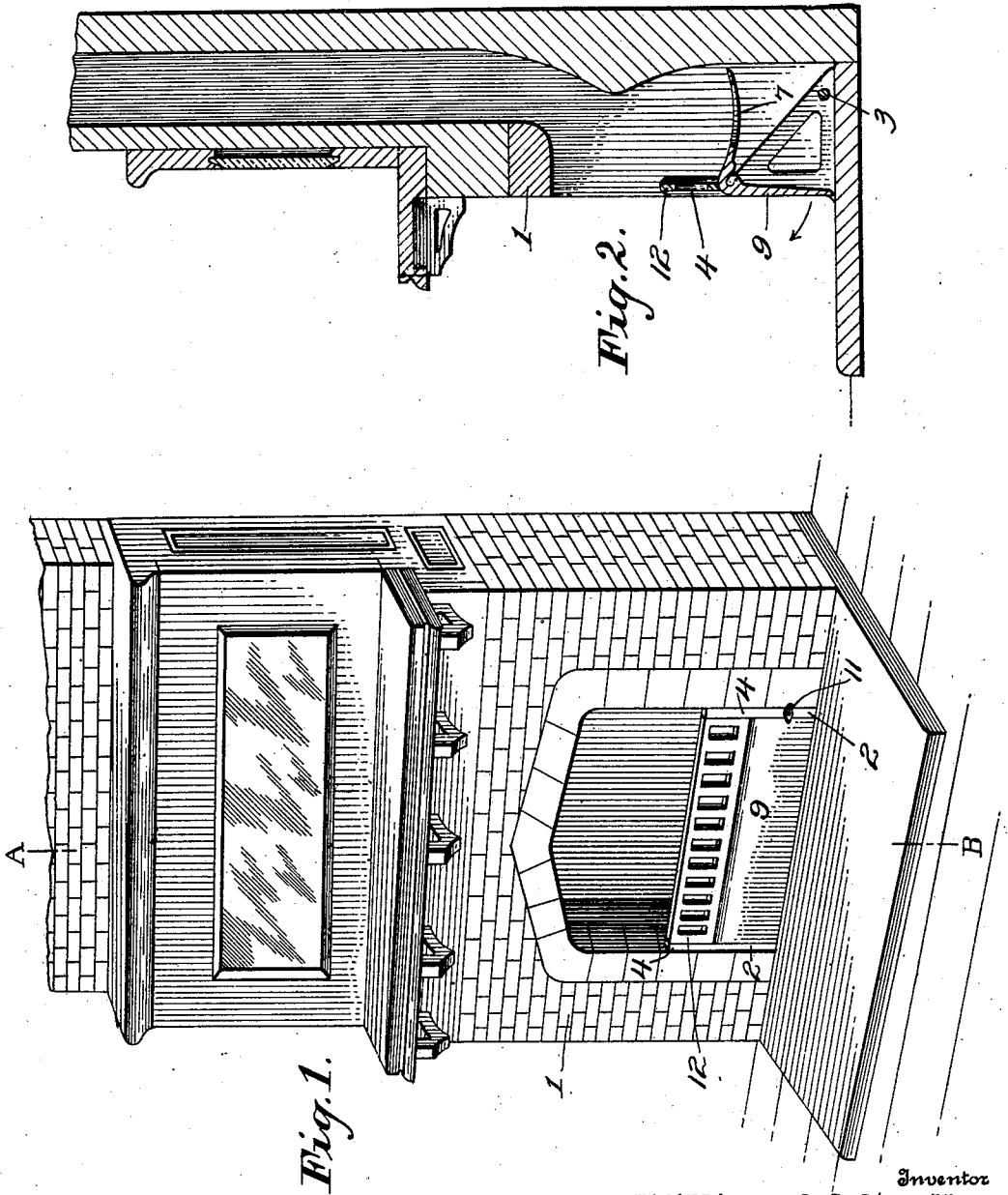


W. C. MIZELL.
SELF DUMPING GRATE.
APPLICATION FILED APR. 6, 1909.

937,685.

Patented Oct. 19, 1909.

2 SHEETS—SHEET 1.



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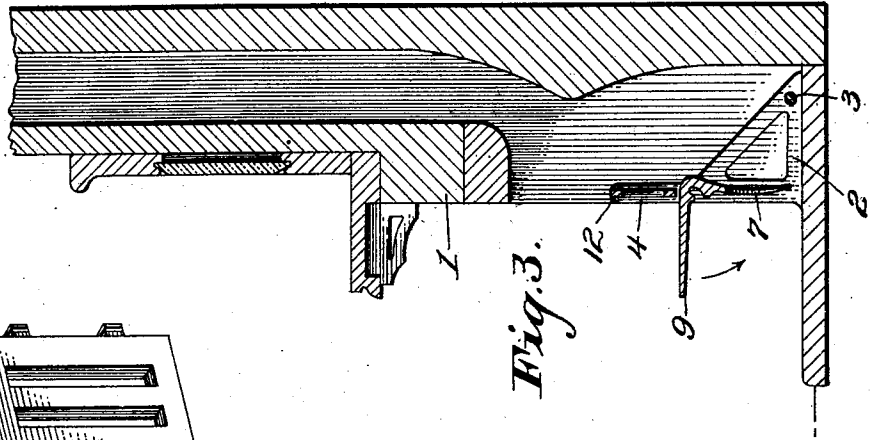


Fig. 3.

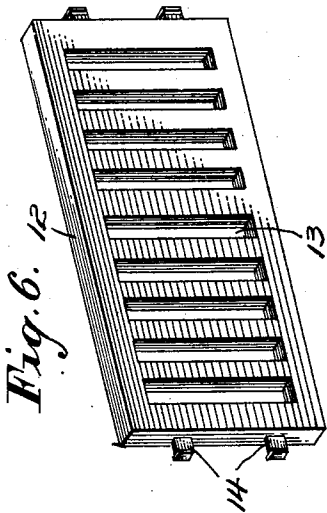


Fig. 6.

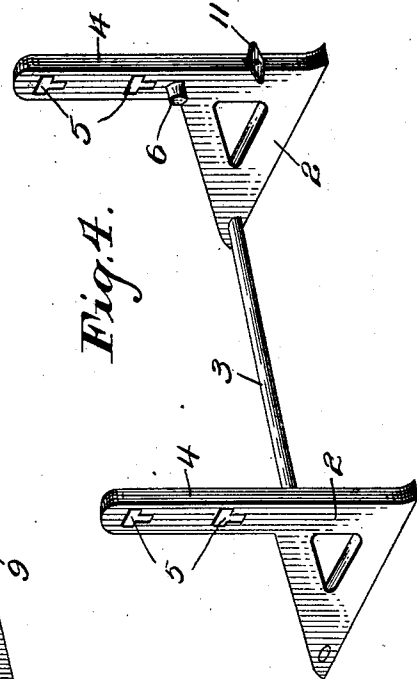


Fig. 4.

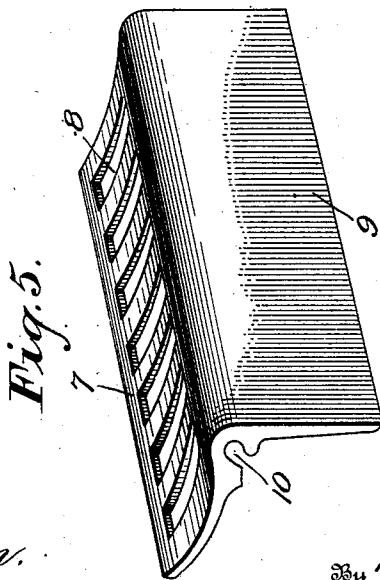


Fig. 5.

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UNITED STATES PATENT OFFICE.

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SELF-DUMPING GRATE.

937,685.

Specification of Letters Patent.

Patented Oct. 19, 1909.

Application filed April 6, 1909. Serial No. 488,208.

To all whom it may concern:

Be it known that I, WILLIAM C. MIZELL, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented new and useful Improvements in Self-Dumping Grates, of which the following is a specification.

This invention relates to grates for open fireplaces, the object of the invention being to provide a grate which is adapted to automatically dump under the weight of the clinkers and ashes thereon and to be secured in normal position, so that upon the release of the securing means the grate will automatically tilt to discharge the clinkers and ashes.

A further object of the invention is to provide a grate of this character which is pivotally mounted and provided with a depending door or apron to close the base of the fireplace, and which normally balances the weight of the grate and is overbalanced by the latter when a body of fuel or ashes rests upon the grate, combined with means for holding the parts in operative position, so that upon the release of such means the grate will tilt and deposit its load, while the door or apron will swing open to permit of the removal of the ashes from the fireplace.

A still further object of the invention is to provide a grate of the character described having a supporting frame of simple construction and a removable fender, the parts being so combined and arranged as to permit of their ready disconnection for removal, storage or transportation, and their ready assemblage for use.

With these and other objects in view, the invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a perspective view of a fireplace showing the application of the invention, the parts being arranged in normal operative position. Fig. 2 is a vertical section on the line A—B of Fig. 1. Fig. 3 is a view similar to Fig. 2 showing the grate tilted to dumping position and the apron

swung outward. Fig. 4 is a perspective view of the grate frame. Fig. 5 is a perspective view of the grate and apron. Fig. 6 is a similar view of the fender.

Referring to the drawings, 1 designates an open fire place, within the lower portion of which is arranged the grate supporting frame, which rests upon the hearth of the fireplace. This frame comprises a pair of substantially triangular brackets 2 arranged in a horizontal position and fixedly or removably connected at the rear by a coupling rod 3. From the front portion of each bracket rises a standard or upright 4 provided with T-shaped slots 5 and an inwardly extending journal 6. The frame is of proper width and depth to occupy the lower portion of the fireplace and may be suitably secured in position therein, if desired.

The grate 7 comprises an oblong rectangular concavo-convex plate provided with a series of spaced slots 8 for the passage of the ashes and upward circulation of air, and formed integral with the forward edge of this grate and extending downwardly at right angles therefrom is a preferably imperforate plate 9, forming a door or apron to close the front portion of the fireplace when the grate is in operative position, to conceal and prevent escape of the ashes therein. The combined grate and apron is provided with end recesses 10 forming open bearings to detachably engage journals 6 on the standards of the frame, by which it is pivotally mounted upon the frame.

The grate and apron form an element pivoted to swing in a vertical plane in the fireplace, the grate being of greater weight than the apron to overbalance the same and provide for an automatic dumping operation of the grate and swing the apron upward to uncover the front of the fireplace below the grate for the removal of the ashes, as hereinafter described.

Figs. 2 and 3 clearly show the mode of arrangement and mounting of the parts, from which it will appear that the front edges of the frame brackets 2 and standard 4 are flush with each other and with the front wall of the fireplace, and that the grate and

apron are pivotally mounted thereon to normally assume the position shown in Fig. 2, wherein the grate is horizontally disposed to form a support for the bed of fuel, while the
 5 apron or door is vertically disposed to close the front of the space or bed below the grate to receive the ashes. The apron normally overbalances the grate, so as to maintain the parts in such position, whereby the
 10 apron will conceal and prevent the ashes falling from the grate into the lower portion of the fireplace from escaping on to the front portion of the hearth. Fig. 3 shows the grate tilted to a vertical position, and the
 15 apron swung up to a horizontal position, which position the grate assumes in dumping its load. The weight of the fuel supported by the grate is sufficient to overcome the resistance of the apron to the tilting of
 20 the grate, and therefore, in use of the grate some suitable means must be provided to hold the parts in operative position. In the present instance I have shown a turn button
 11 mounted on the front of one of the brackets to engage the apron and hold the latter
 25 from outward movement, thus maintaining the parts in the position shown in Fig. 2.

When the turn button is retracted, it will be understood that the grate will tilt downward under the weight of the ashes or fuel
 30 thereon and dump the same into the bottom of the fireplace, while the apron will be swung up to a horizontal position. In order to remove the ashes, it is then simply necessary to swing the apron down to a slight degree to move the grate upward, so that the
 35 ashes may be extracted by a shovel or suitable type of rake.

A fender 12 is provided to cover the space
 40 at the front of the fireplace adjacent to and above the grate, and comprises an oblong rectangular plate or casting of sufficient length and depth to fit between the standards 4. This plate is provided with slots or
 45 other suitable perforations 13 for admission of air to the space above the fuel and to impart an ornamental appearance thereto. Each end of the fender is formed with a pair of outwardly extending T-shaped holding
 50 lugs 14 which are adapted to engage the T-shaped slots 5 in the standards to secure said fender in operative position. The lugs are adapted to be first fitted in the upper cross
 55 portions of the slots 5 and to then drop down into the lower vertical portions of said slots with their cross pieces bearing against the outer surfaces of the standards to secure the fender in place, as well as to couple the frame brackets together at the front.

60 It will be understood that the fender may be detached by a reverse movement from that described, and that the grate and apron may be readily removed from the frame for convenient package in close compass for
 65 storage or transportation. By removably

connecting the brackets 2 to the ends of the rod 3, the parts of the frame may be also detachably connected, so that all of the elements may be packed together in the closest possible space.

70 From the foregoing description, taken in connection with the drawings, the construction and mode of use of my improved self-dumping grate will be readily understood, and it will be seen that the invention provides a grate which may be readily applied
 75 to and removed from a fireplace, conveniently packed for storage or transportation, and which affords manifold conveniences in dumping and removing the ashes with a
 80 minimum amount of time and labor.

Having thus fully described the invention, what is claimed as new, is:—

1. The combination of a fireplace, an element pivoted to swing in a vertical plane in
 85 the fireplace, said element comprising a fuel grate and an apron depending from the grate arranged when in normal position to hold the grate in a substantially horizontal
 90 position and to close the front of the fireplace below the same.

2. The combination of a fireplace, an element pivoted to swing in a vertical plane in
 95 the fireplace, said element comprising a fuel grate and an apron depending from the grate arranged when in normal position to hold the grate in a substantially horizontal
 100 position and to close the front of the fireplace below the same, said grate being of greater weight than the apron for an automatic dumping action and elevation of the
 105 apron, and means for holding the elements against movement to maintain the grate and apron in normal operative positions.

3. A grate comprising a frame, a grate
 105 proper pivotally mounted on the frame, an apron connected with the normally outer edge of the grate and normally overbalancing the same to hold said grate in a horizontal
 110 position, said apron being arranged to normally hang pendent from the grate to close the front of the space below the grate, and a fender carried by the frame above the grate.

4. A grate comprising a supporting frame,
 115 an element pivoted to swing in a vertical plane upon said frame, said element comprising a fuel grate and an apron depending from the grate arranged substantially at right angles thereto so as to close the front
 120 of the fireplace below the grate when the latter is in normal position, and fastening means upon the frame to engage said apron to hold the parts in normal position against
 125 tilting under the weight of fuel upon the grate.

5. A grate comprising a frame provided with journals and slots above the same, a grate proper, an apron integral with the grate and arranged at right angles thereto,

said grate and apron being pivotally and detachably mounted upon said journals, a fender having locking elements to detachably engage the slots in the frame, and means for engaging the apron to normally hold the same in a vertical position and the grate in a horizontal position.

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

WILLIAM C. MIZELL.

Witnesses:

J. T. SNODGRASS,
EDWARD HACKER.