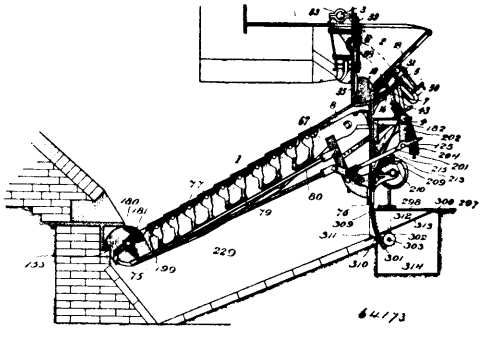
and a spring connected at one end with said member on said cover and at its other end with a rigid member on said box adapted normally to exert draught on said member on said cover in a direction transverse to said links, substantially as described. 4th. In a device of the kind specified, the combination with a plate mounted upon the cover of a box couch adjacent its rear end and provided with a downwardly extending tongue portion, a link pivotally connected at one end with the upper rear end portion of said plate and at its other end with a plate mounted upon the end wall of the box portion below said plate and forward of its pivotal connection therewith, and a link pivotally connected at one end with the front end of said plate and at its other end with a plate on said wall of said box portion forward of said plate in practically horizontal alignment therewith, of a spring connected at one end with the tongue portion of said plate and at its other end with a plate on said wall of said box portion and extending adjacent said last-named link whereby said spring will tend to normally raise said couch cover, substantially as described. 5th. In a device of the kind specified, the combination with a plate mounted upon the cover of a box couch adjacent its rear end and provided with a downwardly extending tongue portion, a link pivotally connected at one end with the upper rear end portion of said plate and its other end with a plate mounted upon the end wall of the box portion below said plate and forward of its pivotal connection therewith, and a link of greater length than said first-named link pivotally connected at one end with the front end of said plate and at its other end with a plate on said wall of said box portion forward of said plate in practically horizontal alignment therewith, of a spring connected at one end with the tongue portion of said plate and at its other end with a plate on said wall of said box portion and extending adjacent said last named link, whereby said spring will tend to normally raise said couch cover, substantially as described. 6th. A box couch hinge comprising a member adapted to be secured to the couch cover, members adapted to be secured to the end wall of the box portion of the couch, pivotal link connections between said members, said link connections being at angles to, but not crossing, whereby said member on said cover will move in two arcs, and a spring connected at one end to said member on said cover and at its other end to one of said members on said end wall of said box portion and extending transversely to one of said link connections and adjacent the other thereof, substantially as described.

No. 64,173. Furnace. (*Fournaise.*)



William McClave, Scranton, Pennsylvania, U.S.A., 5th October, 1899; 6 years. (Filed 23rd February, 1899.)

Claim.—1st. In a furnace, the combination with a suitable grate, of a hopper for feeding fuel thereto, the said hopper having a pivoted front and a curved lower portion, means for raising or lowering the pivoted front for permitting access to the interior of the furnace approximately on a line with the top surface of the grate for introducing kindling fuel, and a pusher mounted in the lower portion of the hopper for forcing the regular fuel out upon the grate, substantially as described. 2nd. In a furnace, the combination with a suitable grate, of a feed hopper, the said feed hopper having a hinged front for permitting access to the top of the grate, mechanical means for raising and lowering said hinged front and sliding gates adapted to regulate the size of the discharge opening of the hopper, and means for raising or lowering the same, substantially as described. 3rd. In a furnace, the combination with a suitable grate, of a hopper for feeding fuel thereto, the said hopper having a curved lower portion, and a hinged front and means for raising the said pivoted front to different heights and supporting the same in the various positions for permitting access to the interior of the furnace, substantially as described. 4th. In a furnace, the combination with a suitable grate, of a hopper for feeding fuel thereto, a pivoted front forming a part of the hopper wall, a screw engaging the said pivoted front for raising or lowering the said pivoted front to gain access to the interior of the furnace, substantially as described. 5th. In a furnace, the combination with a suitable grate, of a hopper for feeding fuel thereto, the said hopper having a pivoted front, comprising a plate pivoted at its upper end to the hopper having strengthening webs formed thereon, a screw mounted on the lower portion of the hopper and engaging a pivoted sleeve secured thereto, the upper end of the said screw being pivotally connected to the said plate, and a hand operating wheel secured to the said screw for rotating the same, the construction being such that the plate may be lifted to a proper height to permit of the introduction of kindling fuel on to the grate, substantially as described. 6th. In a furnace, the combination with a grate, of a hopper for feeding fuel thereto, the said hopper having a curved bottom, an oscillating pusher mounted in the said hopper, means for closing the joint between the pusher and the curved bottom of the hopper, a pivoted plate forming the front of the hopper, the lower end of the said plate when in its lower position engaging the oscillating pusher, and means for oscillating the said pusher whereby fuel may be forced upon the grate, substantially as described. 7th. In a furnace, the combination with a grate, of a hopper, for feeding fuel thereto, the said hopper having end walls and a central partition or housing, the said end walls and the partition being hollow and adapted to enclose the supporting arms of a pusher, an oscillating pusher secured to the said arms, and means for oscillating the said pusher for forcing the fuel out of the hopper, substantially as described. 8th. In a furnace, the combination with a grate, of a hopper for feeding fuel thereto, the said hopper having a curved pusher mounted in said hopper and pivotally supported so as to move along the surface of the curved bottom, a pivoted front mounted in the hopper extending down into close proximity to the said pusher, followers mounted in the said recesses in the lower end of the said plate and engaging the upper surfaces of the pusher for keeping the fuel from getting between the said pusher and plate, and followers mounted in the pusher for preventing the fuel from getting beneath it, substantially as described. 9th. In a furnace, the combination with a grate, of a hopper for feeding fuel thereto, said hopper being provided with a discharge opening at its lower end, a gate for partially closing the said discharge opening comprising a slide or plate mounted upon the rear wall of the hopper, and means for raising or lowering the said gate, substantially as described. 10th. In a furnace, the combination with a grate, of a hopper for feeding fuel thereto, the said hopper having a discharge opening, slides or gates for partly closing the same, the said slides being formed of plates having strengthening webs and having notches cut into their lower ends for presenting a broken line of metal to the heat, bell crank levers connected with the said gates by means of links, a bar or rod connecting the said bell crank levers, and a hand operating lever for operating the said bell crank levers, whereby the gates may be raised or lowered to open the discharge opening more or less, substantially as described. 11th. In a furnace, the combination with a grate, of a hopper, for feeding fuel thereto, a swinging pusher mounted in the said hopper, means for operating the said pusher comprising a power shaft mounted outside the furnace front, an arm secured to the said shaft, an arm secured to the shaft of the pusher, slides moving in both of these arms, and means for pivotally connecting them, a screw mounted upon one of said arms and engaging one of the slides, and means secured to the said screw for rotating it whereby the slides will be adjusted to regulate the feed of the pusher, substantially as described. 12th. In a furnace, the combination with a hopper, of a pusher mounted therein, means for oscillating the said pusher comprising a rock shaft mounted outside the furnace front, a slotted arm secured thereto, a slotted arm secured to the pusher, slides mounted in each of the said slotted arms and a pivot pin for connecting them, a screw mounted upon the power shaft arm and engaging a sleeve upon one of the slides, and a hand operating wheel secured to the said screw whereby the slides may be adjusted in the slots to vary the swing of the pusher, substantially as described. 13th. In a furnace, the combination with rocking grate bars and a feed hopper, of a rock shaft for operating the grate bars and the pusher in the hopper, a main power shaft mounted upon the furnace front above the hopper, means for connecting the said rock shaft with the said power shaft comprising an arm secured upon the rock shaft, a link connected with the power shaft, and means for conecting the said link with the said arm when it is desired to operate the grates and hopper, substantially as described. 14th. In a furnace, the combination with a rocking grate and a hopper, of a rocking shaft for operating the same, a main power shaft mounted above the hopper, an arm secured to the rock shaft, a link detachably secured to the said arm, a spring pressed clutch mounted upon the rock shaft, the construction being such that if the grate or hopper mechanism becomes clogged the clutch will permit the rock shaft to stop and at the same time make sufficient noise to attract attention, substantially as described. 15th. In a furnace, the combination with a grate principally made up of rocking grate bars, of means for rocking the said grate bars, means for adjusting the said rocking means, whereby the grate bars may be given a uniform movement throughout or may have a graduated movement from one end to the other, substantially as described. 16th. In a furnace, the combination with an inclined grate having rocking grate bars, of a rocking frame for actuating the same, adjustable means connecting said frame with the said bars, the construction being such that the frame will be adapted to rock the said bars uniformly or with a graduated movement with respect to each other, substantially as described. 17th. In a furnace, the combination with an inclined grate having rocking grate bars, of a rocking frame adapted to actuate the same, rods connecting the said frame with the bars, and means for adjustably connecting said rods to the said frame, the construction being such that upon rocking the frame a graduated or uniform movement will be given to the different por-