No. 697,538. Patented Apr. 15, 1902.

G. R. PROWSE.

GRATE.

(Application filed Feb. 25, 1901.)

(No Model.)

FIG. 1.

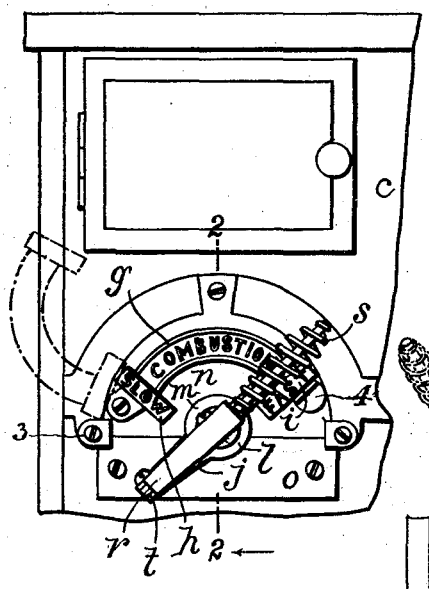


FIG. 2.

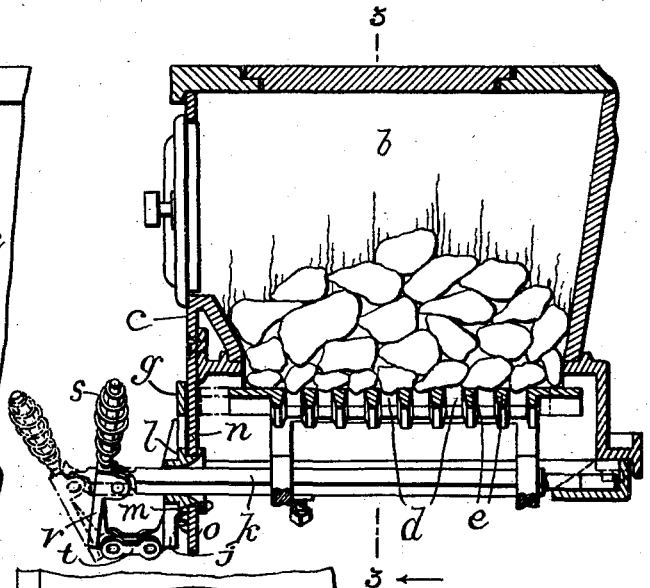
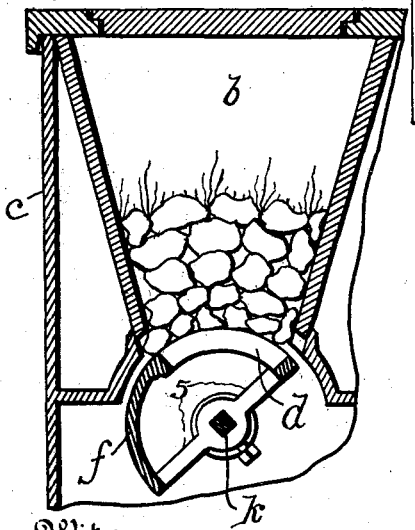


FIG. 3.



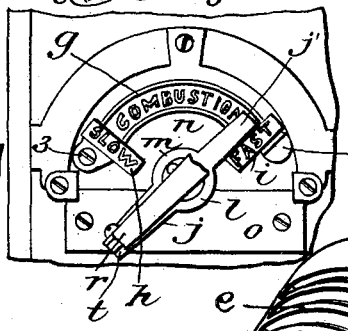
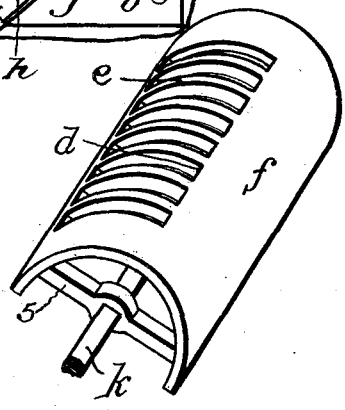


Fig. 5.

FIG. 4.



Witnesses

Inventor.

George Roger Prowse

By his Attorney

UNITED STATES PATENT OFFICE.

GEORGE ROGER PROWSE, OF MONTREAL, CANADA.

GRATE.

SPECIFICATION forming part of Letters Patent No. 697,538, dated April 15, 1902.

Application filed February 25, 1901. Serial No. 48,864. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ROGER PROWSE, of the city of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Grates; and I do hereby declare that the following is a full, clear, and exact description of the same.

The invention, broadly speaking, consists, first, in forming a grate so that it can be used to some extent as a damper, and to that end is made with an open-grate portion and a closed or blinded damper portion, said grate being adapted to be moved to bring either the grate portion or the damper portion or a part of each into position across the bottom of the fire-chamber with the object of varying or cutting off the draft area, and thereby quickening or slackening the combustion in the fire-pot, and, secondly, in a special application of the invention to a semicylindrical grate and in providing an arrangement of shaking device whereby the same handle can be used to both shake the grate in a longitudinal direction and rotate the same.

For full comprehension, however, of my invention reference must be had to the accompanying drawings, forming a part of this specification, in which like symbols indicate the same parts, and wherein—

Figure 1 is a front elevation of the fire-pot portion of a cook-stove provided with my invention. Fig. 2 is a longitudinal vertical sectional view thereof, taken on line 2 2, Fig. 1. Fig. 3 is a transverse vertical sectional view thereof, taken on line 3 3, Fig. 2; and Fig. 4 is a detail perspective view of my improved grate removed. Fig. 5 is a detail front elevation of the grate-operating device partly broken away.

The fire-pot proper, *b*, is and may be of the well-known downwardly-tapered pattern and is supported in the usual manner in the frame *c* of the stove.

The grate to which my invention is in its preferred embodiment applied is of the semicylindrical type and oscillatory, and I form it of a circumferential length double that of the bottom opening of the fire-pot and preferably half a circle in extent. One half or portion of my grate is circumferentially slotted, as at *d*, to provide a series of grate-bars *e*, while the other half or portion *f* is intact or blinded, the ends of the half-circle formed by the two portions being connected by radial bars 5 and the grate made shorter in axial length than its supporting-frame *c* to allow of its longitudinal reciprocation for the purpose of shaking the fire.

My improved means for indicating the angular position of the grate relatively to the fire-pot consists of a segmental gage-plate *g*, having a pair of stops *h* and *i* at each end thereof, said plate being arranged at the front of the fire-pot portion of the stove concentrically of the oscillatory grate and pivotally connected at one end by a screw or bolt 3 and having its other end supported by a rigid lug 4 upon the frame-plate *n*, so that it can when desired be turned out of position, as shown by dotted lines in Fig. 1, to allow the grate to be turned to a fuller extent and the fire dumped. By the variation of the amount of perforate and imperforate surface at the fuel-bottom the raking action caused by the longitudinal reciprocation of the grate is also varied. A cross-bar *j* is provided, having a hub midway of its length with a squared opening whereby it is slipped over the squared shaft *k* of the grate, this hub being interiorly flared toward the grate and having its perimeter formed with a pair of annular flanges *l* and *m*, between which are located the stationary supporting frame-plate *n* and the movable frame-plate *o*, both of which frame-plates are of the construction usually adopted in the construction of the type of stoves to which my invention particularly relates. One end *j'* of this cross-bar *j* extends over the gage-plate *g* sufficiently to impinge upon the stops *h* and *i*. A lever *r* is pivotally mounted about midway of its length upon the outer end of the grate-shaft, and one end thereof is formed with a handle *s*, while the opposite end is connected by a link *t* to the end of cross-bar *j* opposite to that extending over the gage-plate.

By drawing out and pushing in the handle the grate can be reciprocated and the fire shaken, and by swinging the grate within the limit of the stops *h* and *i* the draft area can be increased or decreased and combustion in the fire-pot quickened or slackened, as desired, while to dump the grate it is only necessary to first turn the handle to a vertical position, hold it there until the plate *g* is

turned up and outward on its pivot 3 to the dotted position shown, when both stops are out of the way of the bar *i* and the grate free to be turned to any extent.

What I claim is as follows:

1. The combination with a stationary fire-pot, of a semicylindrical integral fire-grate presenting a permanently-flush fuel-supporting surface of twice the area of the bottom opening in the fire-pot, the extended area of such supporting-surface being blinded, and means adapted either to reciprocate or oscillate said grate to at times, cause the blinded portion to completely close such bottom opening of the fire-pot, substantially as described and for the purpose set forth.

2. The combination with a stationary fire-pot, of a movable fire-grate twice the width of that of the bottom opening of the fire-pot, of less length than the supporting-frame therefor and having its portion of extended width blinded, the whole presenting a permanently-flush fuel-supporting surface and means adapted to either reciprocate or oscillate said grate, for the purpose set forth.

3. The combination with a stationary fire-pot having an oblong bottom opening, of a semicylindrical grate of twice the circumferential length of the width of said bottom opening, said grate comprising an open-grate portion and closed or blinded portion and the ends of the half-circle so formed connected by bars 5 extending transversely of the grate; a shaft upon which said bars are mounted, and means connected to said shaft adapted either to reciprocate or oscillate said grate to cause either said open portion or blinded portion to extend across the bottom opening of the fire-pot, substantially as described and for the purpose set forth.

4. The combination with a fire-pot having an oblong bottom opening, of a semicylindrical grate of twice the circumferential length of the width of said bottom opening, said grate comprising an open-grate portion and a closed or blinded portion, which together present a permanently-flush fuel-supporting surface, and means adapted to either oscillate said grate to cause said open portion or blinded portion to extend across said bottom opening of the fire-pot, or to reciprocate said grate longitudinally of said bottom opening, substantially as described and for the purpose set forth.

5. The combination with a fire-pot having an oblong bottom opening, of a semicylindrical grate of twice the circumferential length of the width of said bottom opening, said grate comprising an open-grate portion of as great area as said bottom opening and a closed or blinded portion of as great area as said bottom opening, and the ends of the half-circle so formed connected by bars 5 extending transversely of the grate; a shaft upon which said bars are mounted, and means adapted either to reciprocate or oscillate said grate to cause either said open portion or blinded portion to extend aross said bottom opening of the fire-pot, substantially as described and for the purpose set forth.

6. The combination with a fire-pot having an oblong bottom opening, of a semicylindrical grate of twice the circumferential length of the width of said bottom opening, said grate comprising an open-grate portion of as great area as said bottom opening and a closed or blinded portion of as great area as said bottom opening, which portions together present a permanently-flush fuel-supporting surface, and means adapted to either oscillate said grate to cause said open portion or blinded portion to extend across said bottom opening of the fire-pot, or to reciprocate said grate longitudinally of said bottom opening, substantially as described and for the purpose set forth.

7. The combination with a stationary fire-pot, of an oscillating semicylindrical fire-grate comprising an open-grate portion and a closed or blinded portion and means adapted either to oscillate or axially reciprocate said grate, substantially as described and for the purpose set forth.

8. The combination with an oscillating grate and its operating-shaft, of a part rotatable with said shaft; means for securing said part against longitudinal movement with said shaft; a lever extending transversely of said shaft and fulcrumed at one end to said part; and means pivotally connecting said lever midway of its length to said shaft, substantially as described and for the purpose set forth.

9. The combination of the front frame-plate of a stove; a fire-pot having an oblong bottom opening; an oscillatory semicylindrical grate; comprising an open axial grate portion and a closed or blinded axial grate portion; a squared shaft for oscillating said grate; a cross-bar rotatable with said shaft; a hub integral with said cross-bar midway of the length thereof and projecting through and rotatable in an opening in said frame-plate and having a squared opening to allow the passage of the squared end of said shaft therethrough; a pair of flanges integral with the perimeter of said hub and located one on each side of said frame-plate; a pair of stops for limiting the oscillatory movement of said cross-bar; a lever extending transversely of said shaft and pivotally connected midway of its length thereto; and a link fulcruming one end of said lever to the corresponding end of said cross-bar, substantially as described and for the purpose set forth.

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

GEORGE ROGER PROWSE.

Witnesses:
FRED. J. SEARS,
FRANK H. DENMAN.