

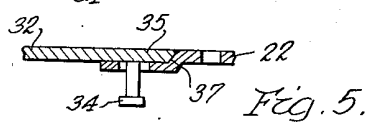
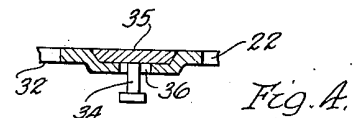
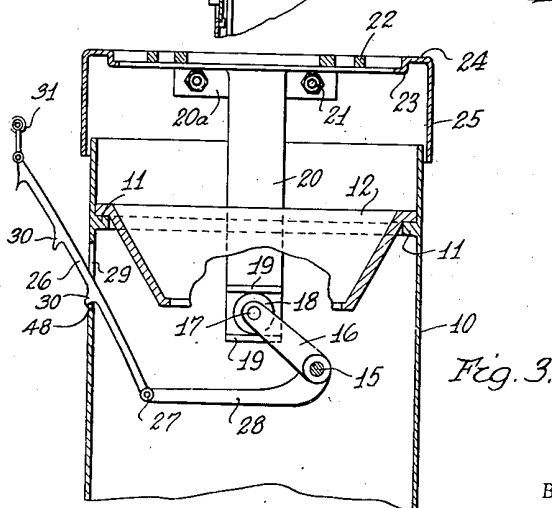
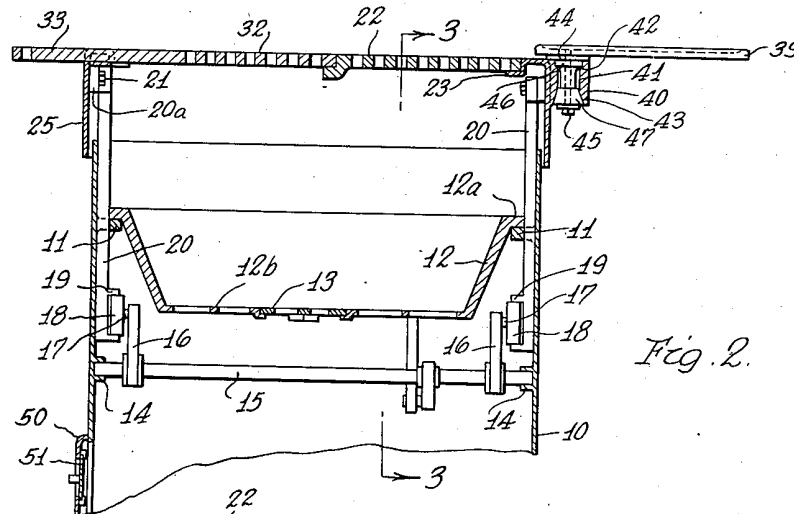
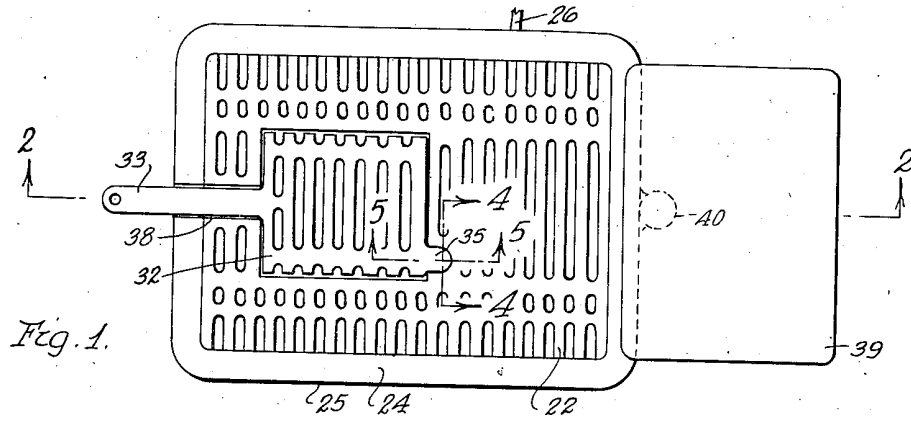
Aug. 3, 1943.

E. D. BETTS

2,325,828

OUTDOOR COOKING STOVE

Filed Jan. 5, 1942



INVENTOR.
EVERETT D. BETTS
BY *Joseph Parley*
ATTY.

Loco Cookers, EX1011

IPR2024-00642

Loco Crazy Good Cookers, Inc. v. North Atlantic Imports, LLC

UNITED STATES PATENT OFFICE

2,325,828

OUTDOOR COOKING STOVE

Everett D. Betts, Fowlerville, Mich., assignor to
Ann Arbor Foundry Company, Inc., Ann Arbor,
Mich., a corporation of Michigan

Application January 5, 1942, Serial No. 425,613

6 Claims. (Cl. 126—25)

This invention relates to outdoor cooking or camp stoves and has for its principal object to provide a new and improved stove of this type of markedly sturdy construction, neat and attractive in appearance and capable of being manufactured and sold at a relatively low price.

Another object of the invention is to produce a stove of this type in which means are provided for adjusting the top or cooking grate of the stove towards and from the fire bed to secure the proper or desired cooking temperatures.

A further object is to provide the grate top with a movable section of novel construction for permitting ready access to the fire box for re-fueling purposes.

Another object is to provide a stove of this type with a movable top or grate having manually adjusting means readily accessible from the exterior of the stove and suitable connections therefrom to said grate located exteriorly of the fire box yet enclosed within the side walls of the stove for adjusting the grate at the desired position relatively to the firebed and so that the manually adjusting means will not become unduly heated or the connecting members warped by the heat of the fire.

A further object is to provide a construction such that all of the parts of the stove can be made of unmachined castings thereby eliminating the necessity for costly machining operations.

The above and other objects of the invention will appear more fully from the following more detailed description and by reference to the drawing forming a part hereof wherein:

Fig. 1 is a plan view of a stove constructed in accordance with the principles of the invention.

Fig. 2 is a central vertical section taken on the line 2—2 of Fig. 1.

Fig. 3 is a transverse section on the line 3—3 of Fig. 2 and Figs. 4 and 5 are sectional details on the lines 4—4 and 5—5 of Fig. 1.

As shown in the drawing, the stove consists of an outer base portion 10, fabricated by casting in the particular embodiment of the invention illustrated, and which casting is provided along its inner wall a short distance below the top thereof with an inwardly projecting rib 11 which serves as a support for the fire box 12, the latter have a peripheral horizontal flange 12a for engaging the rib 11. The side walls of the fire box incline inwardly and downwardly to direct the fuel towards the ash grate section 12b, which at its central portion is provided with a hinged clean-out section 13 to enable the ashes to be dumped into the ash pit (not shown) formed by

the lower part of the base casting 10, the section 13 being pivotally mounted to the main portion of the fire box, or grate, with an ordinary hinge pin.

As the hinged section 13 forms no part of the present invention, the detailed construction thereof is not illustrated. When it is desired to remove the ashes from the fire box, the hinged section is merely swung upwardly on the hinge pin and the ashes can then be pushed or swept into the opening formed at the center of the grate by the hinged sectional part 13.

The top of the stove consists of a horizontal cooking grate 22 which seats upon an inwardly projecting flange 23 of a cast rim 24, the top of which is flush with the top of the grate 22, and the outer sides 25 of which extend vertically downwardly a considerable distance so as to surround and overlap the upper portions of the sides of the base 10. This grate and rim structure is mounted upon the base of the stove so as to be vertically movable relative thereto by supporting means consisting of elements to be described in the next succeeding paragraphs.

Formed on the inner wall of the base casting 10 are a pair of bosses 14 in which is journaled a cross shaft 15, having secured thereto a pair of lever arms 16. Each of these lever arms is provided at its outer end with a laterally projecting pin 17 on which is journaled a roller 18. The rollers 18 each fit within a pair of lugs 19 formed at the bottom of the supporting bars 20. At their upper ends the bars 20 are suitably secured as by bolts 21 to the vertical sides 25 of the supporting rim 24, the bars preferably being provided with an integral cross piece 20a to insure the desired stability to the grate top when in its raised positions.

Manually operated means located exteriorly of the stove are provided for adjusting the grate towards and from the fire bed and such means consist of an actuating lever 26 connected by a pin 27 to the end of a crank 28, which is mounted against rotation in some suitable manner upon the shaft 15. The actuating lever 26 extends through a slot 29 in the sidewall of the base portion 10 of the stove and is equipped with suitable lugs 30 at spaced intervals along its under side, which lugs are thereby positioned to engage the adjacent side wall of the base portion along the lower horizontal end 48 of the slot 29 and thereby retain the actuating lever 26 in a fixed position. It can be seen from Fig. 3 that upward movement of the actuating lever 26 will cause a clockwise rotation of the crank 28 and the shaft 15, which rotation will produce upward movement

of the grate 22 through the action of the pair of levers 16 upon the supporting bars 20 and their associated structure. Since the supporting bars 20, upon which the grate retaining rim 24 is mounted, are not rigidly supported laterally, the depending flange 25 of the rim 24 is designed with a depth such that this flange overlaps and surrounds the upper portion of the walls of the base portion 10 to a sufficient extent so that the base portion imparts lateral stability to the rim 24 and the parts supported thereby in all the positions to which the rim and cooking grate may be moved by the operation of the actuating lever 26. The actuating lever 26 is equipped with a handle 31 to facilitate its operation.

A portion of the grate 22 consists of a movable section 32 formed with a long handle 33 which projects considerably beyond the outer side of the rim 24. Since this movable section 32 is provided so that fuel may be fed to the fire box 12, the section is connected to the grate 22 by a single pivot pin 34 located in an ear-like projection 35 formed adjacent one corner of the section, as this type of connection permits the fuel opening to be entirely uncovered by merely rotating the movable section 32 90° from its position shown in Fig. 1. Sectional views of this pivot pin construction are given in Figs. 4 and 5 and show that the pivot pin 34 briefly consists of a bolt mounted in the ear-like projection 35 of the movable section 32 and extending through a hole 36 formed in the adjacent portion of the grate 22. When the movable section 32 is in its closed position, it is desirable that it lie flush with the surrounding portions of the grate 22 and to provide for this a recess and supporting flange 37 is formed as a part of the grate structure adjacent the ear-like projection 35 and underlying the inner edge of the movable section; and both the grate 22 and its surrounding rim 24 are relieved by a slot 38 to accommodate the handle 33 of the movable section. In placing the movable section in its open position it is first raised by lifting up on the handle 33 and then given arcuate motion about the pivot pin 34, this combination of movements resulting in the movable section 32 being superimposed upon the grate 22. In order to allow for this upward movement of the movable section it is to be noted that a considerable amount of clearance is provided between the head of the pivot pin 34 and the adjacent underside of the recessed portion 37 of the grate.

As an aid for cooking, the stove is equipped with a griddle 39, which is rectangular in shape and is mounted upon the rim structure 24 by a pivotal type of connection, which allows the griddle to be swung over the grate 22 so as to be exposed to the heat from the fire and also to be swung outwardly of the stove in the position shown in Fig. 1. The means for pivotally mounting the griddle 39 consist first of a bracket 40 formed as part of or attached to the depending flange 25 of the rim structure. A hole 41 is formed in this bracket, the upper portion of this hole having a counterbored seat 42 and the lower portion having a conically-formed seat 43. A boss 44 is formed on the underside of the griddle 39 and rests upon the upper surface of the bracket 40 when the griddle is mounted in position. A mounting bolt 45 extends through the griddle and its boss 44 and through the bracket 40. In order that the griddle may be held in a horizontal position by this mounting bolt, a collar member 46 and a large conical washer 47 are placed

within the bracket 40, the collar 46 engaging the upper counter-bored seat 42 within the bracket and the conical washer 47 being contained within the seat 43. The mounting bolt 45 extends through both the collar member 46 and the conical washer 47 so that when the whole assembly is drawn together by tightening up on the mounting bolt, the griddle 39 will be drawn to and retained in a horizontal position by the wedge-like action of the conical washer 47 engaging the conically-formed seat 43 of the bracket 40.

In operation, a stove constructed on the principles of the present invention offers many advantages. First among these is the ability to regulate the cooking temperature at the grate by raising or lowering the entire upper structure as desired. Furthermore, the cooking temperature at the griddle can be regulated either simultaneously with that at the grate by raising or lowering the upper structure, or independently thereof by swinging the griddle outwardly therefrom if its temperature gets beyond that desired. When the griddle has sufficiently cooled, it can be swung back over the fire. The griddle can easily be removed for cleaning and storing when the stove is not in use so as to protect it from the weather.

Another advantage is that the combined grate and griddle construction of the top of the stove allows different foods to be simultaneously prepared by different methods of cooking. The griddle may also be used as a hot or warm plate, depending on its position relative to the fire, or when in its outer position shown in Fig. 1, it may be used as a table upon which food and cooking utensils may be placed. In passing it should be observed that the combination of griddle and grate is most advantageous when the area of the griddle relative to that of the grate is such that the fuel door in the latter remains accessible when the griddle is embodied upon the grate for cooking purposes.

The design of the fire box is also advantageous. Its suspension at a considerable distance from the floor of the ash pit, together with the provision of an ash door 53 which is provided with a damper 51 in such ash pit insures a free circulation of air and, hence, an even burning of the fuel at all times. Furthermore, the rate at which the fuel burns may be controlled by regulating the amount of air supplied through the damper.

Although the stove illustrated in the particular embodiment of the invention shown and described herein is a very sturdy and durable affair, it is to be noted that all its parts have been designed in a manner such that they may be fabricated by casting methods and because of the few machining operations required the stove may be manufactured and sold at a very low price.

While a stove constructed almost exclusively of cast parts is not ordinarily very portable because of its weight, a certain amount of portability is obtained when such type of stove is constructed in accordance with the principles of this invention because of the fact that the various parts of the stove, such as the grate, the fire box and the griddle, which together compose a great portion of the total weight of the unit, may be readily disassembled and remounted in position after the base structure of the stove has been placed in a new location.

It is understood that changes and modifications may be made in the representative con-

struction of the invention disclosed and described herein without departing from the scope of the invention as defined in the following claims.

I claim:

1. In a stove of the type described, a base portion, an ash door and damper located in the lower portion thereof, a fire box mounted in said base portion above the level of said ash door and damper, a cooking grate positioned above said fire box, a griddle pivotally located adjacent said cooking grate whereby said griddle may be positioned over said first box or positioned outwardly of said cooking grate and means whereby said cooking grate and griddle may be moved vertically relative to said fire box; said means comprising a shaft horizontally mounted in said base portion, cranks mounted adjacent each end of said shaft, said cranks engaging vertical reciprocating members, the upper portion of said members being connected to said cooking grate and griddle, and actuating means extending exteriorly of said base portion for causing rotation of said shaft and said cooking grate having a downwardly depending peripheral flange arranged in telescoping relation with the upper part of said base portion and serving to guide the same for vertical movement and also forming in effect a continuation of said base portion to close the side walls of said fire box when said grate is moved to its upper position.

2. A stove of the type described comprising a base portion, a fire box mounted in said base portion, said base portion having side walls which surround and extend upwardly above said fire box, and means whereby air may enter said base portion below the level of said fire box, a vertically movable rim having a depending flange surrounding the upper sides of said base portion in telescoping relationship therewith, a cooking grate supported by said rim, a griddle pivotally mounted upon said rim whereby said griddle may be positioned above said cooking grate or swung outwardly therefrom, and means for moving said rim vertically relative to said fire box.

3. A stove of the type described comprising a base portion, a fire box mounted in said base portion, said base portion having side walls which surround and extend upwardly above said fire box, and means whereby air may enter said base portion below the level of said fire box, a supporting rim positioned adjacent the upper part of said base portion, said supporting rim being mounted for limited vertical movement relative to said fire box, a vertical closure member associated with said supporting rim, said closure member overlapping the upper sides of said base portion in telescoping relation therewith in all positions of said supporting rim, a cooking grate supported by said rim, and a grid-

dle pivotally mounted upon said rim whereby said griddle may be positioned above a portion of the area of said cooking grate or swung outwardly therefrom.

4. A stove of the type described comprising a base portion, a fire box mounted in said base portion, said base portion having side walls which surround and extend upwardly above said fire box, and means whereby air may enter said base portion below the level of said fire box, a supporting rim positioned adjacent the upper part of said base portion, said supporting rim being mounted for limited vertical movement relative to said fire box, a vertical closure member associated with said supporting rim, said closure member overlapping the upper sides of said base portion in telescoping relation therewith in all position of said supporting rim, a cooking grate supported by said rim, a griddle pivotally mounted upon said rim whereby said griddle may be positioned above a portion of the area of said cooking grate or swung outwardly therefrom, and a fuel door comprising a movable section of said cooking grate, said movable section being located in that portion of the area of said cooking grate not covered by said griddle.

5. A stove of the type described comprising a base portion, a fire box mounted in said base portion, said base portion having side walls which surround and extend upwardly above said fire box, and means whereby air may enter said base portion below the level of said fire box, a vertically movable rim having a depending flange surrounding the upper sides of said base portion in telescoping relationship therewith, a cooking grate supported by said rim, means for moving said rim and cooking grate vertically relative to said fire box and for holding the same at different elevations, and said depending flange serving as a side closure between said grate and said base in the different elevations of the former.

6. A stove of the type described comprising a base portion, a fire box mounted in said base portion, said base portion having side walls which surround and extend upwardly above said fire box, and means whereby air may enter said base portion below the level of said fire box, a vertically movable rim having a depending flange surrounding the upper sides of said base portion, a cooking grate supported by said rim, means for moving said rim and cooking grate vertically relative to said fire box and for holding the same at different elevations, said depending flange serving as a side closure between said grate and said base in the different elevations of the former, and the depending flange of said rim serving to limit lateral movement of said rim and grate during vertical movement thereof.

EVERETT D. BETTS.