

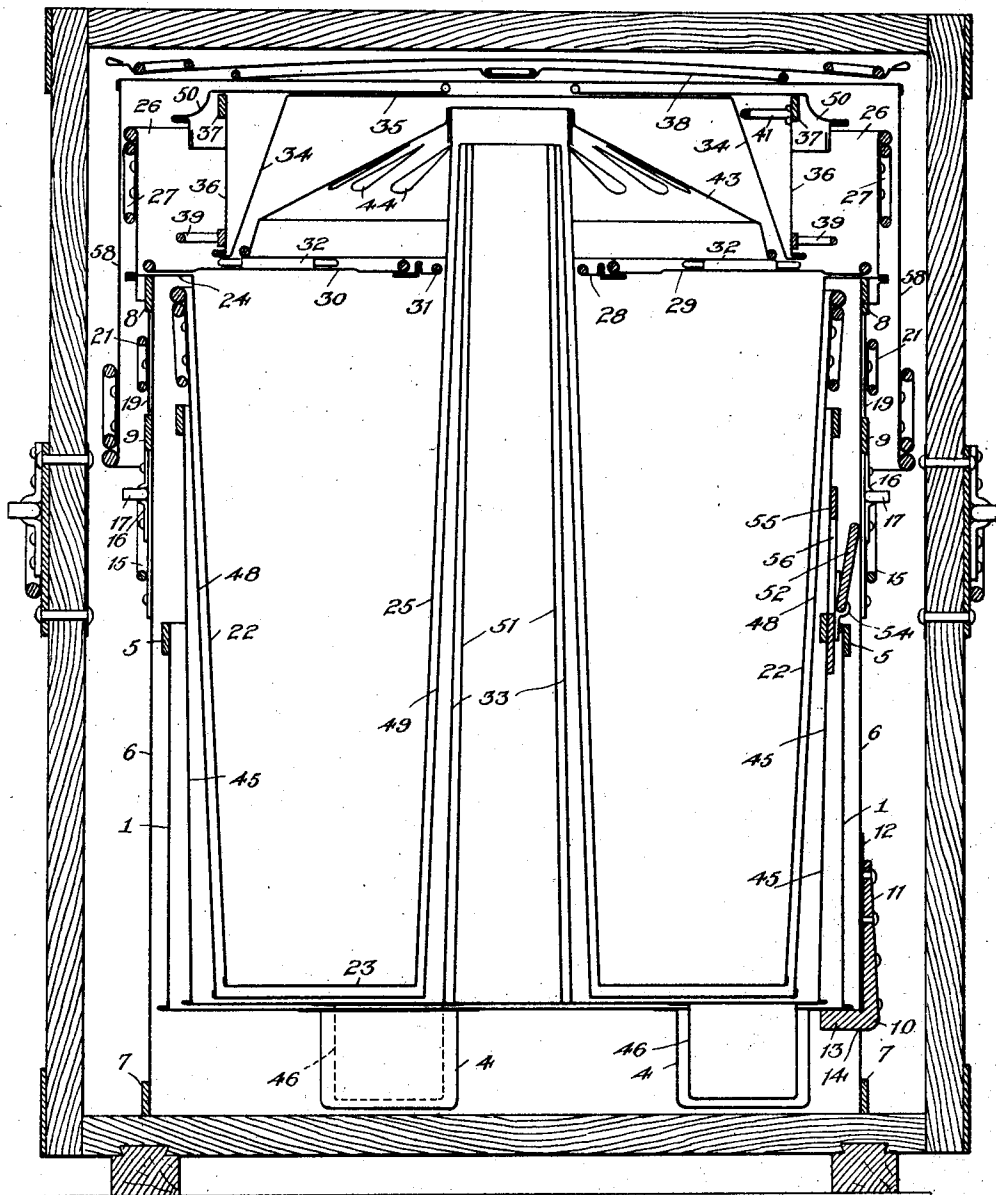
R. I. SCHONITZER.
FIELD STOVE.
APPLICATION FILED OCT. 19, 1918.

1,391,415.

Patented Sept. 20, 1921.

6 SHEETS—SHEET 1.

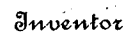
Fig. 1.



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6 SHEETS—SHEET 2.



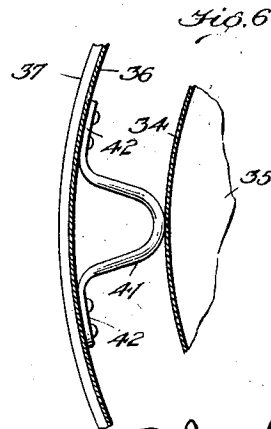
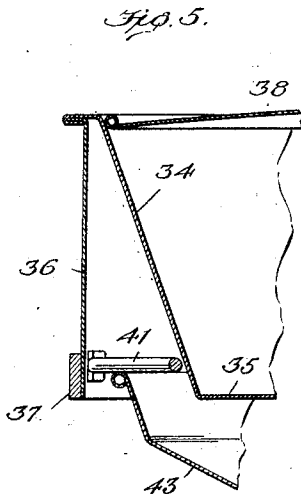
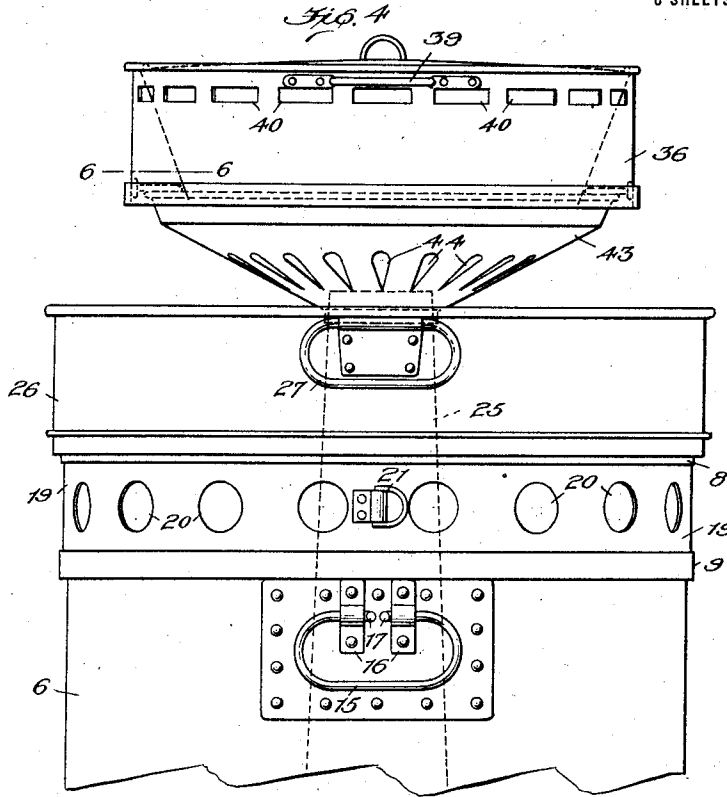
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6 SHEETS—SHEET 3.



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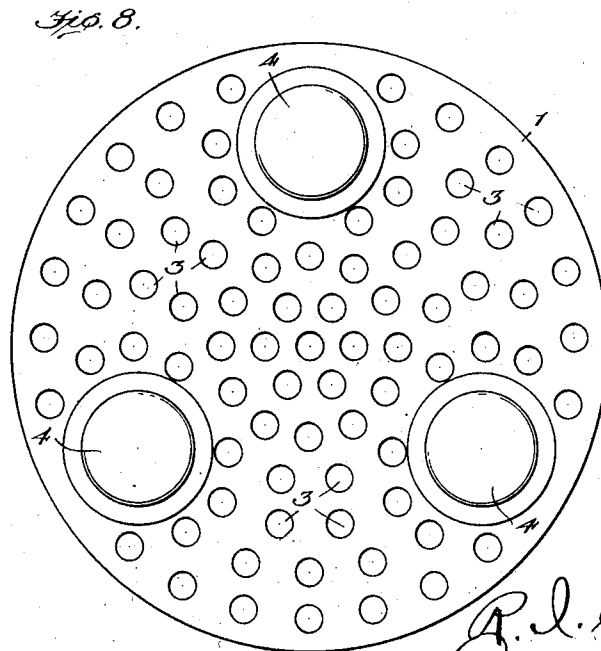
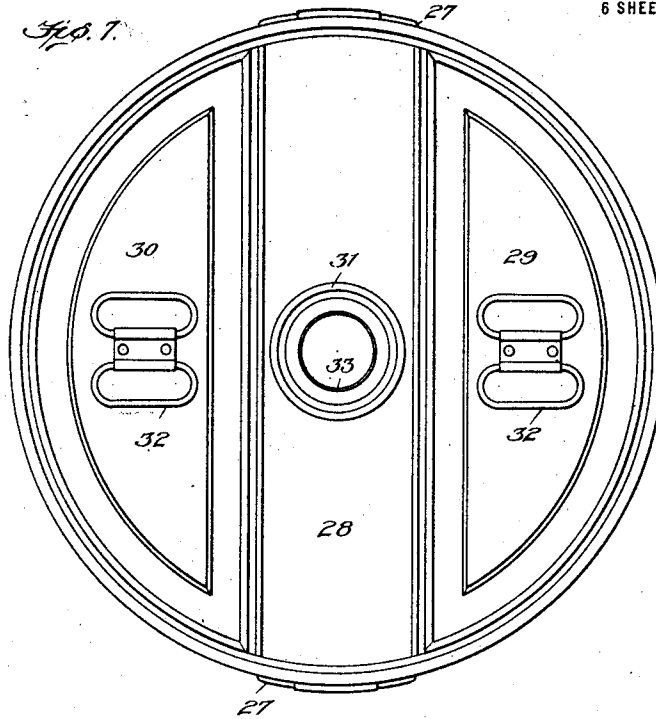
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6 SHEETS—SHEET 4.



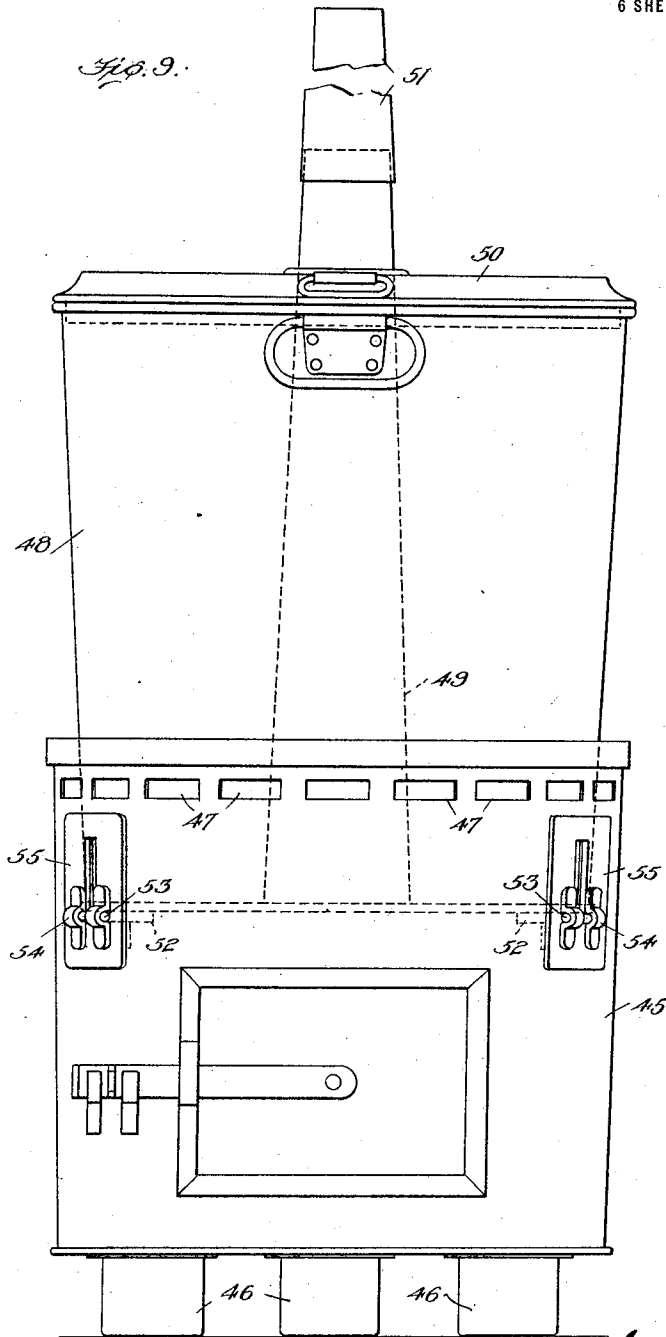
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APPLICATION FILED OCT. 19, 1918.

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6 SHEETS—SHEET 5.



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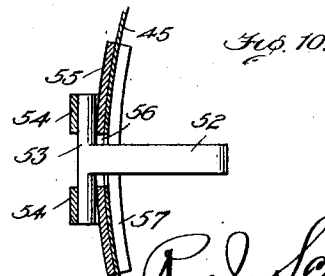
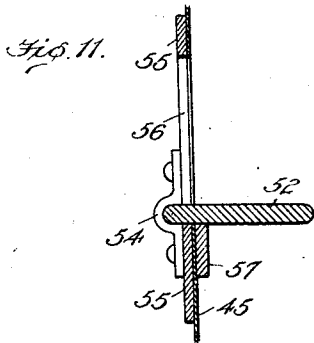
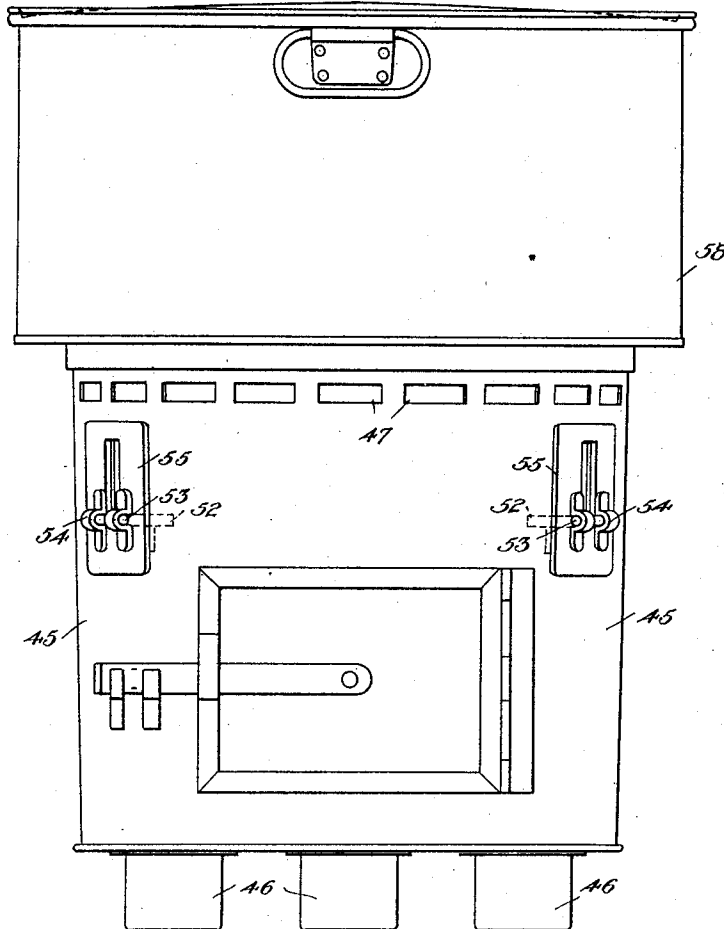
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1,391,415.

Patented Sept. 20, 1921.

6 SHEETS—SHEET 6.

Fig. 12



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UNITED STATES PATENT OFFICE.

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FIELD-STOVE.

1,391,415.

Specification of Letters Patent. Patented Sept. 20, 1921.

Application filed October 19, 1918. Serial No. 258,847.

To all whom it may concern:

Be it known that I, RUDOLPH I. SCHONITZER, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Field-Stoves, of which the following is a specification.

This invention is a field stove, and while capable of general outdoor use, is particularly designed for army purposes.

The present invention has been particularly designed to obtain a maximum of heating and cooking space with a minimum of stove size and construction. The several parts of the stove are arranged to be telescoped into compact form for storage and transportation, the parts being so constructed and arranged that they may be readily assembled for use without the necessity of manipulating any fastening devices, such for instance as bolts and nuts, screws, springs, hooks or the like, while at the same time provision is made for insuring the rigid maintenance of the parts when they have been assembled in position for use.

It is a very important object of the invention to obtain a very large heating area with respect to the cubical contents of the cooking receptacles.

Further objects of the invention are to provide for the effective maintenance of the fire within the fire-box, irrespective of the character of the weather, the parts being so assembled that rain, snow, sleet and wind do not materially affect the cooking operation, other than inconvenience to the cooks, and therefore it is unnecessary to provide a covering or protection for the stove, as for instance a tent.

Simple and effective means are provided for controlling the draft to the extent of obtaining substantially perfect combustion, thereby obviating the annoyance ordinarily occasioned by smoke.

With these and other objects in view, the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly set forth in the appended claims, it being understood that changes in the form, proportion, size and minor details may be made, within the scope of the claims, without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings,

Figure 1 is a central vertical sectional view of a field stove, embodying the features of the present invention and shown in nested or telescoped condition and contained in a box, for convenience in transportation and storage.

Fig. 2 is a side elevation of the stove set up for boiling purposes.

Fig. 3 is an enlarged detail sectional view on the line 3—3 of Fig. 2.

Fig. 4 is a view similar to Fig. 2, showing the top portion only thereof and equipped with means for roasting and frying meat.

Fig. 5 is an enlarged fragmentary vertical sectional view taken through one side of the roasting and frying pan.

Fig. 6 is an enlarged fragmentary sectional view on the line 6—6 of Fig. 4.

Fig. 7 is a plan view of the cover for the boiling pot or receptacle.

Fig. 8 is an inverted bottom plan view of the fire-pot or box.

Fig. 9 is a side elevation of another embodiment of the invention.

Figs. 10 and 11 are detail views illustrating an adjustable support for the cooking receptacle shown in Fig. 9.

Fig. 12 is a view similar to Fig. 9, illustrating the use of a different form of cooking receptacle.

In Fig. 2 of the drawings, there has been illustrated one embodiment of the invention which includes a firepot or box 1, cylindrical in shape and made of sheet metal of suitable gage, as is each of the several parts of the device. In one side of this fire-box is a suitable fire-door 2 through which fuel is introduced. Any sort of fuel may be employed, such as coal, wood or any solid fuel that will burn free enough to boil liquid and bake, roast and fry meats. As best shown in Fig. 8 of the drawings, it will be seen that the bottom of the fire-box is provided with a plurality of small openings 3, thereby producing a perforate bottom which constitutes a grate. This perforate bottom of the fire-box is spaced above the ground or other support by means of legs 4. Each leg is cylindrical in shape and hollow, the bottom of the leg being closed and its top being open. It is preferred to employ three such legs disposed at the apexes of an equilateral triangle in order to obtain a stable support for the fire-box. The top of the

fire-box is reinforced by an external metal band 5 of suitable dimensions disposed flush with the top of the firepot, which firepot is entirely open throughout its top.

5 Externally telescoped upon the top of the fire-box is a heating chamber or compartment 6 in the form of an open-ended cylindrical drum, provided at its bottom with an external annular reinforcing band or ring 7. A similar reinforcing band or ring 8 is provided at the top of the drum or chamber, and another reinforcing ring 9 is disposed a suitable distance below the upper ring 8, for a purpose as will be hereinafter described. For the purpose of supporting the heating chamber or drum 6 on the firepot 1, there is provided a supporting bracket as best shown in detail in Fig. 3 of the drawings, three such brackets being provided 10 upon the drum 6 adjacent the lower end thereof and spaced equidistant therearound. The support consists of a substantially L-shaped bracket 10, the upright arm 11 of which is flattened out and riveted to a reinforcing plate 12 which in turn is suitably secured to the drum 6. The horizontal arm 13 of the bracket extends inwardly through an opening 14 in the adjacent wall of the drum 6 and rests upon the top edge of the fire-box 1. As there are three of these brackets, it will be seen that the drum 6 will be properly supported upon the top of the fire-box, lateral displacement being prevented by the telescoping of the parts 1 and 6. Suitable handles 15 are provided upon the heating drum 6 for convenience in handling the same. Each handle is in the form of a ring or bail mounted to swing vertically in bearings 16, each extremity of the handle 40 being extended at substantially right angles thereto, as at 17, best shown in Fig. 1 of the drawings, to form a stop for engagement with the adjacent side of the drum 6 when the handle is swung up into a substantially horizontal position. The drum is provided 45 with an annular series of openings 18 disposed between the upper rings or bands 8 and 9, which openings are controlled by means of a rotatable damper ring 19 embracing the drum and disposed between the bands 8 and 9. This damper ring is provided with openings 20 corresponding to the openings 18, whereby the draft through said openings may be conveniently controlled. 50 A suitable handle 21 is provided upon the damper ring 19 for adjusting the same. Depending within the drum 6 is a cooking receptacle 22 which is disposed concentrically within the drum and spaced therefrom. This receptacle 22 tapers downwardly to a bottom 23 disposed slightly above the horizontal arms of the brackets 10. At the top of this cooking receptacle there is an external annular horizontal 65 flange 24 which rests upon the top edge of

the drum 6, so as to support the cooking receptacle within the drum. It will be noted that there is an annular passage for the products of combustion, around the cooking receptacle 22 and between the same and the drum 6, which annular passage is closed at its top by the flange 24. Extending centrally through the cooking receptacle 22 is a tubular pipe or passage 25 which is open at its bottom and in communication with the top of the fire-box, said pipe or passage extending a suitable distance above the top of the drum, and constituting a stack or chimney for the offtake of the products of combustion. When the openings 18 and 20 are in alinement an inlet is provided for admitting atmospheric air into the top portion of the annular combustion chamber defined by the drum 12 and the cooking receptacle 22. At the top of the cooking receptacle 22 there is a cylindrical extension 26 beaded or otherwise secured to the outer edge of the flange 24 and having a portion extending below the flange 24 and telescopically embracing the top of the drum 6. Diametrically opposite handles, one of which has been shown at 27, are provided on the part 26 of the cooking receptacle 22 for convenience in lowering the latter into the drum 6 and for withdrawing the receptacle from the drum. Of course, each handle is a swinging handle capable of being folded downwardly flat against the side of the part 26 so as to permit collapsing of the parts as will hereinafter appear. 100

The open top of the cooking receptacle 22 may be closed by a cover, such as shown in Fig. 7 of the drawings. This cover is made up of three parts designated 28, 29 and 30. The part 28 is a central diametric part having a central opening 31 for the reception of the top end of the pipe 25, said part 28 being long enough to rest upon the flange 24 at the top of the receptacle 22. The parts 29 and 30 are duplicates, and each is segmental in shape so as to complete a circular cover and of dimensions to rest upon the flange 24. Each of the segmental cover parts is provided with a suitable handle 32. 105

As thus far described, it will be seen that the parts may be very conveniently assembled by telescoping them one upon the other. It will further be noted that there are no separate or movable fastening devices which require manipulation, and therefore there are no parts likely to get out of order. When assembled, a fire may be made in the fire-box as in any ordinary stove, the products of combustion being carried off through the pipe 25 and through any number of extensions thereof, one such extension being shown at 33 in Fig. 2 of the drawings. Whatever is to be boiled, such for instance as potatoes, beans or the like, together with water, is placed in the receptacle 22 through 130

the open top thereof, the three-part cover being then replaced. It will here be noted that the middle cover part 28 is held in place by reason of the pipe 25 extending through the opening 31 in said part. It will now be understood that the products of combustion not only contact with the bottom of the receptacle 22 but also entirely surround the receptacle in the annular space defined by the receptacle and the drum 6, thereby subjecting the upright side walls of the receptacle to the heated products of combustion in a very simple and efficient manner. Furthermore, products of combustion are conducted upwardly through the pipe 25, which pipe constitutes an interior annular wall for the cooking receptacle, and thus said interior wall is subjected to the heated products of combustion. By this arrangement, the heated surface of the cooking receptacle 22 is very large with respect to the cubical contents of said receptacle, which is a very important object of the present invention.

By reason of the fact that the bottom of the fire-box 1 is supported in an elevated position, atmospheric air will be drawn inwardly and upwardly through the perforate or grate bottom of the fire-box. Moreover, air will be supplied to the annular space between the drum 6 and the receptacle 22 through the annular space between the bottom portion of the drum 6 and the top portion of the fire-box 1. The draft can be brought under control by suitable manipulation of the damper ring 19.

Provision has been made for roasting and frying meat at the same time that the receptacle 22 is employed for boiling purposes, and this feature is carried out as illustrated in Figs. 4, 5 and 6, wherein has been illustrated a roasting and frying pan 34 substantially cylindrical in form with its side walls tapering downward to an imperforate bottom 35. Depending from the upper edge of the pan is a cylindrical drum member 36 reinforced at its open bottom with an external annular ring 37. The drum 36 and the side walls 34 of the pan define an annular passage or chamber for the reception of products of combustion, as will hereinafter appear. A suitable cover 38 is provided for the pan, and said pan is also provided with diametrically opposite handles, one of which has been shown at 39 in Fig. 4. The drum 36 is provided with an annular series of openings 40 adjacent the top thereof. Within the bottom portion of the drum part 36 there are three supporting brackets, one of which has been shown in detail in Figs. 5 and 6, and is U-shaped in form, as indicated at 41, the ends 42 thereof being riveted or otherwise secured to the part 36. This supporting bracket rests upon the top edge of a substantially conical pan support 43, the side

walls of which taper downwardly to a central opening which receives the top of the tapered pipe 25, whereby the roasting and frying pan is supported in place, and heated products of combustion are directed against the bottom of the pan in the side walls 34 thereof. Air is admitted through a series of openings 44 provided in the pan support. Air is also admitted through the annular space between the top of the pan support 43 and the drum part 36. When the roasting and frying pan is employed, the additional stack portion 33 shown in Fig. 2 is omitted, in order that the pan support may embrace and rest directly upon the top of the pipe 25. With the exception of the omission of the pipe extension 33, the invention as illustrated in Fig. 4 is the same as that illustrated in Fig. 2, the two figures being employed in order to illustrate the complete invention on a relatively large scale.

In Figs. 9 and 10, there is illustrated a slightly modified form of the invention wherein 45 designates a cylindrical fire-box substantially the same as that illustrated in Fig. 2, except that it is of less diameter, so as to fit within the firepot 1 when the parts are collapsed and nested, and also of greater height, so as to provide a combined firepot and heating drum or chamber, when used as illustrated in Fig. 9. The legs 46 are the same as the legs 4 except that they are slightly smaller so as to telescope therein. Near the top of the fire-box there is an annular series of openings 47 corresponding to the annular series of openings 18 around the top of the heating chamber or drum 6 of Figs. 1 and 4. The difference between the two forms resides in the fact that in each of Figs. 9 and 10 there is no damper ring, and the openings are preferably in the form of slots instead of circular as in Figs. 2 and 4.

In Fig. 9, there has been shown a cooking receptacle 48 of suitable dimensions and tapered downwardly so as to fit within the open top of the fire-box. This cooking receptacle is provided with a central passage 49 in the form of a pipe open at opposite ends and extending through the cover 50 on the top of the receptacle. This pipe or passage 49 constitutes a stack or chimney for the offtake of products of combustion. Any number of lengths of pipe may be added to the pipe 49, as will be readily understood, one such additional section being shown at 51. In order that the receptacle 48 may be supported within the fire-box, a plurality of supporting brackets are provided, one of them being shown in detail in Figs. 11 and 12. Each bracket is substantially T-shaped and includes a shank member 52 and a head 53, the opposite end portions of which constitute trunnions mounted in suitable bearings 54 provided upon a reinforcing plate 55 suitably secured to the exterior of the fire-

box 45. The shank portion 52 works through a slot or opening 56 formed through the reinforcing plate 55 and the fire-box 45, and when in use rests against the stop 57 provided upon the interior of the fire-box. The bottom of the receptacle 48 rests upon the shank members 52 of the brackets when the receptacle is in use. When the several parts of the stove are nested, the shanks 52 of the brackets are swung upwardly into the slots or openings 56 so as to enable the telescoping of the several parts.

In Fig. 12 of the drawings, there has been shown an ordinary pan or receptacle 58 resting upon the top of the fire-box 45, said pan or receptacle being used for cooking purposes or for maintaining heated that which has been cooked in any one of the cooking receptacles 22, 34 and 48, while said receptacles are being used for further cooking purposes.

It will of course be understood that the combined fire box and heating drum 45, shown in Figs. 9 and 12, and in collapsed condition in Fig. 1, is a cooking unit independent of the unit shown in Fig. 2.

As shown in Fig. 1 of the drawings, the various parts of the apparatus may be telescoped into a relatively small space for convenience in storage and transportation. To arrange the parts as illustrated, the fire-box 1 is inserted downwardly through the open top of the drum 6 until it rests upon the horizontal arms 13 of the several L-shaped brackets 10. Then the combined firepot and heating drum 45 is nested inside of the fire-box 1 with its legs 46 telescoped with the legs 4 of the fire-box 1. Then the cooking receptacle 48 is placed inside of the part 45, and thereafter the cooking receptacle 22 is placed inside of the receptacle 48. Prior to the insertion of the two cooking receptacles, the pipe sections 33 and 51 are nested and placed centrally within the cooking receptacle 48 so as to be received within the nested pipe sections 25 and 49. The pan support 43 is inverted and placed downwardly upon the upper end of the pipe section 25, and then the roasting and frying pan 34 is inverted and placed over the pan support 43. Finally, the cooking receptacle 58 is inverted and placed downwardly over the top of the several nested members, the cover 59 of the cooking receptacle 58 being placed on top of the inverted receptacle 58.

It is preferred to have the collapsed or telescoped members contained in a wooden box, such as shown at 60, in Fig. 1 of the drawings, whereby the stove will be housed and protected when not in use.

When it is desired to use the apparatus, the parts are successively removed upwardly and thereafter assembled in the forms shown in the several drawings.

It will now be noted that I have dispensed

with the use of fastening devices, and have arranged the parts so that they may be readily assembled and maintained in assembled relation without danger of accidental separation. The omission of fastening devices permits of rapid and accurate assemblage of the parts either in position for use or in collapsed condition.

It will also be noted that smoke and products of combustion are effectually excluded from the interiors of the cooking receptacles, thereby positively obviating any smoky taste and odor to the food which may be cooked on the present stove.

What I claim is:

1. A field stove comprising a fire box having an open top, a grate bottom, legs to support the fire box in an elevated position, a heating drum communicating with and rising from the open top of the fire box, said drum being provided near its top with an annular series of inlet draft openings forming a communication between the atmosphere and the combustion space within the drum, a cooking receptacle associated with the heating drum, and an off-take conduit for the products of combustion.
2. A field stove comprising a fire box having an open top, a grate bottom, legs to support the fire box in an elevated position, a heating drum communicating with and rising from the open top of the fire box, said drum being provided near its top with an annular series of inlet draft openings forming a communication between the atmosphere and the combustion space within the drum, and a cooking receptacle associated with the heating drum, said cooking receptacle having a pipe extending therethrough and communicating with the fire box for the off-take of products of combustion.
3. A field stove comprising a fire box having an open top, a grate bottom, legs to support the fire box in an elevated position, a heating drum communicating with and rising from the open top of the fire box, a cooking receptacle associated with the heating drum, and having a portion within the drum and spaced from the walls thereof, said drum being provided near its top with an annular series of inlet draft openings forming a communication between the atmosphere and the combustion space between the drum and the cooking receptacle, an off-take conduit for the products of combustion.
4. A field stove comprising a fire box having an open top, a grate bottom, legs to support the fire box in an elevated position, a heating drum communicating with and rising from the open top of the fire box, and a cooking receptacle associated with the heating drum, and having a portion within the drum and spaced from the walls thereof,

said drum being provided near its top with an annular series of inlet draft openings forming a communication between the atmosphere and the combustion space between the cooking receptacle and the drum, said cooking receptacle having a pipe extending therethrough and communicating with the fire box for the offtake of products of combustion.

5. A field stove comprising a fire box having an open top, a grate bottom, legs to support the fire box in an elevated position, a heating drum communicating with and rising from the open top of the fire box, and a cooking receptacle associated with the heating drum, said cooking receptacle having a pipe extending therethrough and communicating with the fire box for the offtake of products of combustion, the drum being provided with an annular series of inlet draft openings adjacent the top of the drum and forming a communication between the atmosphere and the combustion space of the drum, and a movable damper ring for the control of the draft openings.

6. A field stove comprising a fire box having an open top, a grate bottom, legs to support the fire box in an elevated position, a heating drum above and communicating with the open top of the fire box, a removable cooking receptacle supported upon and within the drum and spaced therefrom, the drum and cooking receptacle defining an annular space for products of combustion, said annular space being closed at its top and open at its bottom, and a pipe carried by and extending upwardly through the cooking receptacle and open at opposite ends for the offtake of products of combustion, said drum having a damper controlled inlet leading from the atmosphere into the space between the drum and the cooking receptacle.

7. A field stove comprising a fire box having an open top, a heating drum above and in communication with the open top of the fire box, a cooking receptacle supported upon and within the heating drum and spaced therefrom, the walls of the drum and the cooking receptacle defining an annular space for products of combustion, said annular space being closed at its top and open at its bottom, the drum being provided with an annular series of inlet draft openings communicating between the atmosphere and the said annular spaces, and the cooking receptacle being provided with an open ended pipe extending therethrough for the offtake of products of combustion.

8. A field stove comprising a fire box having an open top, a grate bottom, legs to support the fire box in elevated position, a heating drum in communication with the open top of the fire box, a boiling receptacle having a portion within the heating drum

and provided with an open ended pipe extending upwardly therethrough for the offtake of products of combustion, said receptacle and drum being spaced to form an annular combustion chamber, and a frying and roasting pan supported across the open top of the pipe and subject to the heat of products of combustion issuing from the pipe, said annular combustion chamber having a damper controlled inlet leading inwardly thereto from the atmosphere.

9. A field stove comprising a fire box having an open top, a grate bottom, legs to support the fire box in an elevated position, a heating drum in communication with the open top of the fire box, a boiling receptacle having a portion within the heating drum and provided with an open ended pipe extending upwardly therethrough for the offtake of products of combustion, said receptacle and drum being spaced to form an annular combustion chamber, and a frying and roasting pan provided with a surrounding jacket in communication with and supported upon the open top of the pipe through the boiling receptacle.

10. A field stove comprising a fire box having an open top, a grate bottom, legs to support the fire box in an elevated position, a heating drum communicating with the open top of the fire box, a boiling receptacle for the heating drum and provided with an open ended pipe extending upwardly therethrough for the offtake of products of combustion, a substantially conical pan-support open at opposite ends and supported upon and in communication with the top of the pipe, and a frying and roasting pan provided with a surrounding jacket supported upon and in communication with the open top of the pan support and supported upon said pan support.

11. A field stove having an open top fire box provided with a grate bottom and legs to support the fire box in an elevated position, and a removable heating drum of greater diameter than and telescopically embracing the top portion of the fire box and provided with an interior supporting member engaging the top of the fire box to support the drum on the fire box, said fire box capable of being introduced downwardly through the open top of the drum and supported upon the interior supporting member of the drum in the collapsed condition of the stove.

12. A field stove having an open top fire box provided with a grate bottom and legs to support the fire box in an elevated position, and a removable heating drum of greater diameter than and telescopically embracing the top portion of the fire box and provided with an interior supporting member engaging the top of the fire box to support the drum on the fire box, said fire box

- capable of being introduced downwardly through the open top of the drum and supported upon the interior supporting member of the drum in the collapsed condition of the stove, and a cooking receptacle removably supported upon the top of the drum and of dimensions to telescope within the fire box in the collapsed condition of the stove.
- 10 13. In a field stove the combination of an open top fire box, a removable heating drum open at opposite ends and telescopically embracing the top of the fire box, said drum being provided with an internal support
- 15 resting upon the top of the fire box, said fire box capable of being introduced downwardly through the open top of the heating drum and supported upon the internal support of said drum, a cooking receptacle removably suspended within the drum and
- 20 spaced therefrom to form an annular space for products of combustion, said annular space also accommodating the fire box in collapsed condition, a pipe extending upwardly through the cooking receptacle and open at opposite ends for the offtake of products of combustion, a substantially conical pan support removably engaged at its lower smaller end with the top of the pipe
- 30 and capable of being inverted thereon in collapsed condition, and a roasting and frying pan removably supported upon the pan support and capable of being inverted to house the pan support in collapsed condition.
- 35 14. A field stove comprising a fire-box having an open top, a grate bottom, legs to support the fire-box in an elevated position, a heating drum in communication with the open top of the fire-box and supported thereon, a cooking receptacle having a portion within the heating drum and also provided with an enlarged portion above the heating drum, said receptacle and drum being spaced to form an annular combustion chamber, said combustion chamber being closed at its top by the enlarged portion of the cooking receptacle, said cooking receptacle having an off-take pipe extending therethrough and communicating at its lower end with the interior of the drum, said combustion chamber being provided with a damper control inlet leading from the atmosphere into said chamber.
15. A field stove having an open top fire-box provided with a grate bottom and legs to support the fire-box in an elevated position, a removable heating drum open at opposite ends and having its lower end removably supported upon the fire-box and in communication therewith, a removable cooking receptacle having a lower portion within the drum and spaced therefrom to form an annular combustion chamber, the top of the cooking receptacle having an enlarged portion closing the top of the combustion chamber and removably supported upon the top of the drum, an off-take pipe extending through the cooking receptacle and open at opposite ends, and a damper controlled inlet leading from the atmosphere into the combustion chamber adjacent the top thereof.
- RUDOLPH I. SCHÖNITZER.