Dec. 21, 1937. P. M. FORSTER 2,102,893

STOVE

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Fig. 1.

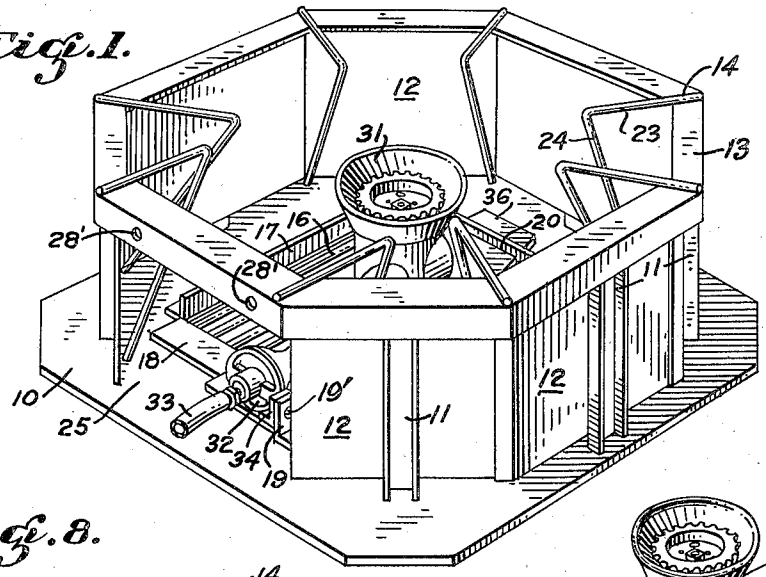


Fig. 8.

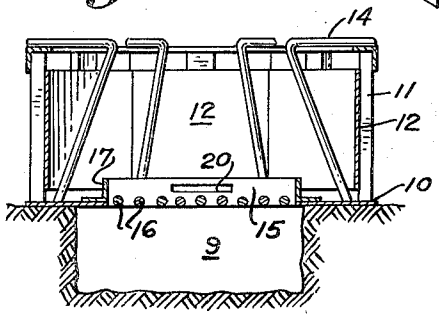


Fig. 4.

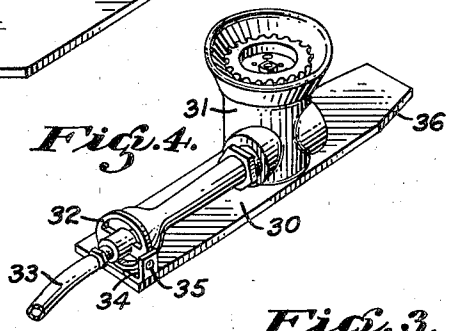


Fig. 3.

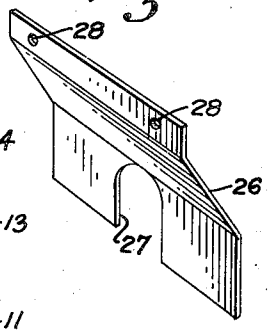
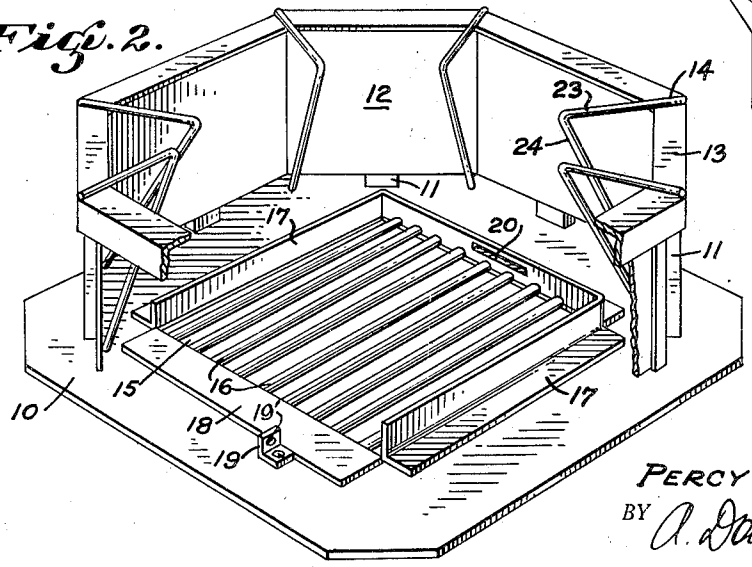


Fig. 2.



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Fig. 5.

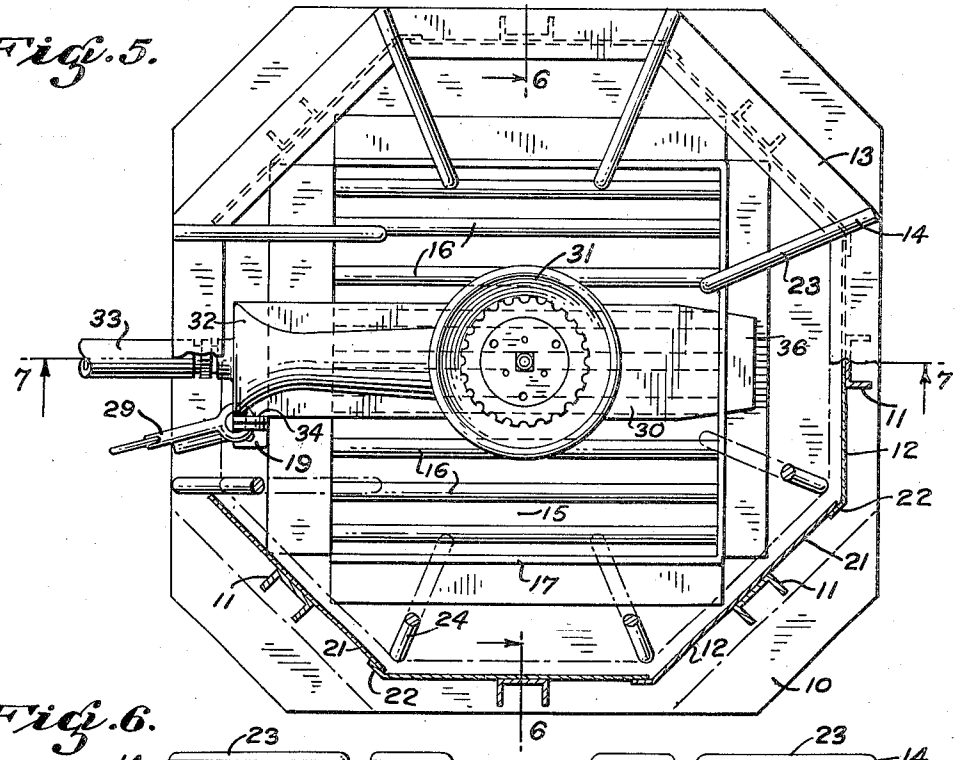
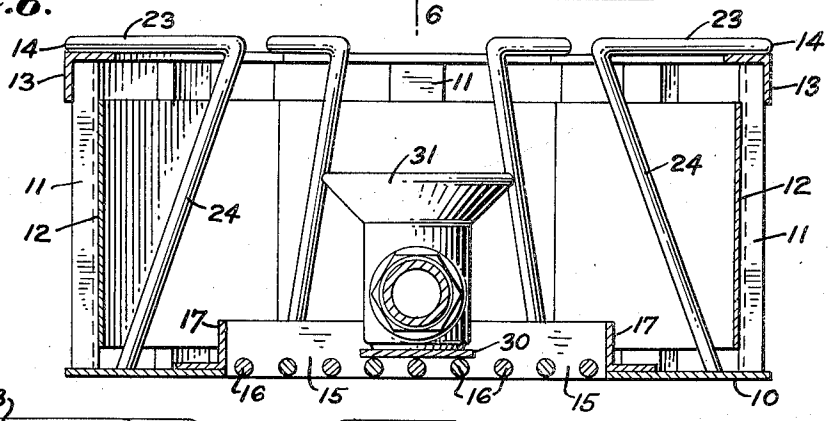


Fig. 6.



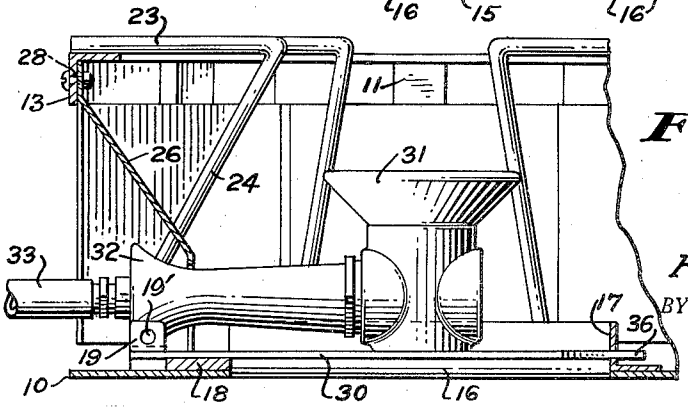


Fig. 7.

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UNITED STATES PATENT OFFICE

2,102,893

STOVE

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Application September 15, 1936, Serial No. 100,886

5 Claims. (Cl. 126—36)

My invention relates to improvements in stoves.

Where stoves are being used in localities where gas is not piped, it is possible to procure various kinds of gases compressed in tanks. This fuel is similar to gas which is available in cities and makes it possible to use stoves equipped for burning gas on construction projects and under other conditions where piped fuel is unavailable. However, conditions frequently arise which make it impossible always to have a supply of this fuel on hand and it becomes necessary to burn wood or coal until more compressed gas or natural gas can be supplied. This in the past has resulted in it being necessary to have two sets of stoves, one which used gas; the other, wood or coal. By means of my invention I have devised a portable combination gas or wood burning stove which, when the gas supply is exhausted for one reason or another, the stove can then be used as a wood or coal stove. This has been found to be of particular advantage in railroad construction camps, army camps, and other situations where groups of men are located for extended periods of time away from towns or cities and where fuel is readily available. It is necessary from a health standpoint that adequate heating facilities be available. This is true in army camps, for instance, where the regulations require that dishes must be washed in very hot water and then rinsed twice in clear boiling water.

One object of my invention is to provide a portable combination stove of rugged construction and adapted to use in a flat position when set directly on the ground.

Another object of my invention is to provide a portable combination wood-gas stove in which the flat bottom surface of the stove is adapted to be sealed by the ground, when used as a gas stove. When it is to be used for wood or coal, a small hole dug in the ground will serve as an ash pit.

It is also an object of my invention to provide a portable stove which may use either wood, coal or gas as a fuel.

It is a further object of my invention to provide a stove of rugged construction adapted to stand rough use.

A further object of my invention is to provide a stove in which the side walls have provision to allow expansion at their joints.

Other objects of my invention will appear from the following description.

In the drawings forming a part hereof;

Fig. 1 is a perspective view of a stove embodying my invention;

Fig. 2 is a perspective view partially broken away with the gas burner removed;

Fig. 3 is a view showing the cover plate used when the stove is operated by gas;

Fig. 4 is a view of the gas burner assembly;

Fig. 5 is a plane view looking down on the stove;

Fig. 6 is a side elevational view taken on the line 6—6 of Fig. 5; and

Fig. 7 is a partial side elevational view taken on line 7—7 of Fig. 5; and

Fig. 8 is a sectional elevational view showing the stove arranged for burning wood.

Referring to the drawings, the stove consists of base plate 10, upright angle members 11, side pieces 12, top angle plate 13, and supporting members 14.

Base plate 10 has cut out section 15 in which are located bars 16. Angle iron member 17 surrounds cut out portion 16 on three sides and flat piece 18 is located on the fourth side of this opening. Burner holder 19, in which is located bolt hole 19', is attached to base plate 10 near the opening 25 as shown in Figs. 1 and 2. Slot 20 is located in the vertical wall of angle iron member 17 as shown. Upright members 11 support top plate 13 to which is attached supporting members 14.

Wall sections 12 are designed to overlap on their ends to allow for heat expansion. Each wall member 12 is attached to an upright member 11 and consists of flat portion 21 and bent end piece 22. Referring to the drawings, Figs. 1 and 5, it will be seen that the right hand edge of each wall member 12 can slide within the bent over portion 22 on the next adjacent wall member 12. Thus, when the stove is in operation, and heat expansion takes place, these side wall members can slide a little, one against the other, which obviates any heat distortion effects. Attached to top plate 13 are vessel supporting members 14. These members have a top part 23, on which rests the vessel containing water or anything else to be heated by the stove. Downward depending portion 24 serves to brace horizontal part 23 of these vessel supporting arms 14 so that they can carry a great deal of weight.

As shown in Fig. 1, one of the side wall pieces 12 is omitted to leave an opening 25. This opening is used to slide the gas burner in and out of the stove when it is desired to change from using gas to wood as a fuel.

When the stove is operated by gas this opening 25 is closed by plate 26 which is shown in Fig. 3. This plate 26 has an opening 27 through which

may fit the gas hose attached to the burners. It is held in position when the stove is being used as a gas stove by being bolted to top member **13** by means of bolts passing through holes **28** in cover plate **26** and holes **28'** in top piece **13** of the stove. When the stove is burning wood this plate member is not used.

Referring to Fig. 4, the gas burner assembly is shown which comprises supporting plate **30** to which is attached burner assembly **31** and air regulating member **32**. Attached to this burner assembly is the hose **33** which supplies fuel from a tank (not shown). Attached to base member **30** is upright piece **34** in which is located bolt hole **35**. Supporting plate **30** is tapered at one end as at **36**. This burner assembly may be of any of the known types.

When this stove is operated by gas, burner assembly **30** is placed as shown in Figs. 1 and 5. This is accomplished by slipping the tapered end **36** of base plate **30** into slot **20** located in angle member **17**. This assembly is held in place by being screwed to burner holder **19** as shown in Figs. 1, 3, and 5. In Fig. 5 the securing means is shown in the form of a snap fastener **29** which is easily removed. Plate **26**, Fig. 3, is then placed over opening **25** and held in place by means of bolts passing through holes **28** in the plate and holes **28'** in member **13** of the stove. This serves to cover the opening **25** and keep uneven drafts from blowing on the flame. Air necessary for the flame enters between the bottom of side plates **12** and base plate **10**. As the stove heats during the course of its operation, side plates **12**, due to their construction, as previously explained, are allowed to slide endways one against the other to allow for expansion as a result of heat.

When wood or coal is used as fuel, plate **26** and the gas burner assembly are removed. The stove is then placed over a trough **9** dug in the ground as shown in Fig. 8. The wood fire is laid and opening **15** in the base plate **10** and bars **16** serve as a grate. Additional fuel is placed on the fire through opening **25**. The flat bottom **10** lends itself well to this utilization of a pit **9** dug in the ground for an ash receptacle.

As the fire burns, ashes fall between grate bars **16** into the trough **9** under the stove. In this manner it is possible to keep supplying the stove with new fuel so as to get its maximum efficiency since no waste ashes will be retained in the grate. As previously explained, side plates **12** expand without any buckling, since there is a slide joint at the ends of each of these plates. This is particularly important when wood is being burned in the stove as the flame is not as concentrated as it is when a gas burner is being used, and results in the side plates **12** becoming extremely hot.

I have found that it is possible with this construction to burn a great deal of fuel and get an efficient flame when burning coal or wood.

It can be readily seen by this description that I have invented a stove having novel features of construction which may be used either as a gas or a wood burning stove.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of my invention, or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A combination wood and gas stove comprising a substantially flat base, having a central cut out portion therein and bars fastened across said opening, a substantially flat centrally apertured top member, and vessel supporting bars extending inwardly a short distance from the sides, a plurality of supporting members securing together the top and bottom in spaced relation, and a plurality of wall sections, each adapted to overlap on its ends with the next adjacent sections and each wall section secured only to one supporting member, whereby said sections may move freely on one another as they expand or contract under the influence of the heat.

2. A combination wood and gas stove comprising a substantially flat base, having a central cut out portion therein and bars fastened across said opening, a substantially flat centrally apertured top member, and vessel supporting means in cooperative relationship with said top member, a plurality of supporting members securing together the top and bottom in spaced relation, and a plurality of wall sections, each adapted to overlap on its ends with the next adjacent sections and each wall section secured only to one supporting member, whereby said sections may move freely on one another as they expand or contract under the influence of the heat.

3. A combination wood and gas stove comprising a substantially flat base, having a central cut out portion therein and bars fastened across said opening, a substantially flat centrally apertured top member, a plurality of supporting members securing together the top and bottom in spaced relation, and a plurality of wall sections, each adapted to overlap on its ends with the next adjacent sections and each wall section secured only to one supporting member, whereby said sections may move freely on one another as they expand or contract under the influence of the heat.

4. A combination wood and gas stove comprising a substantially flat base, having a central cut out portion therein and bars fastened across said opening, a substantially flat centrally apertured top member, and vessel supporting bars extending inwardly a short distance from the sides, supporting means securing together the top and bottom in spaced relation, and a plurality of wall sections, each adapted to overlap on its ends with the next adjacent sections and each wall section secured only to said supporting means along a portion only of its surface, whereby said sections may move freely on one another as they expand or contract under the influence of the heat.

5. A combination wood and gas stove comprising a substantially flat base, having a central cut out portion therein and bars fastened across said opening, a substantially flat centrally apertured top member, supporting means securing together the top and bottom in spaced relation, and a plurality of wall sections, each adapted to overlap on its ends with the next adjacent sections and each wall section secured only to said supporting means along a portion only of its surface, whereby said sections may move freely on one another as they expand or contract under the influence of the heat.

PERCY M. FORSTER.