C. J. BERGLANN.

STOVE.

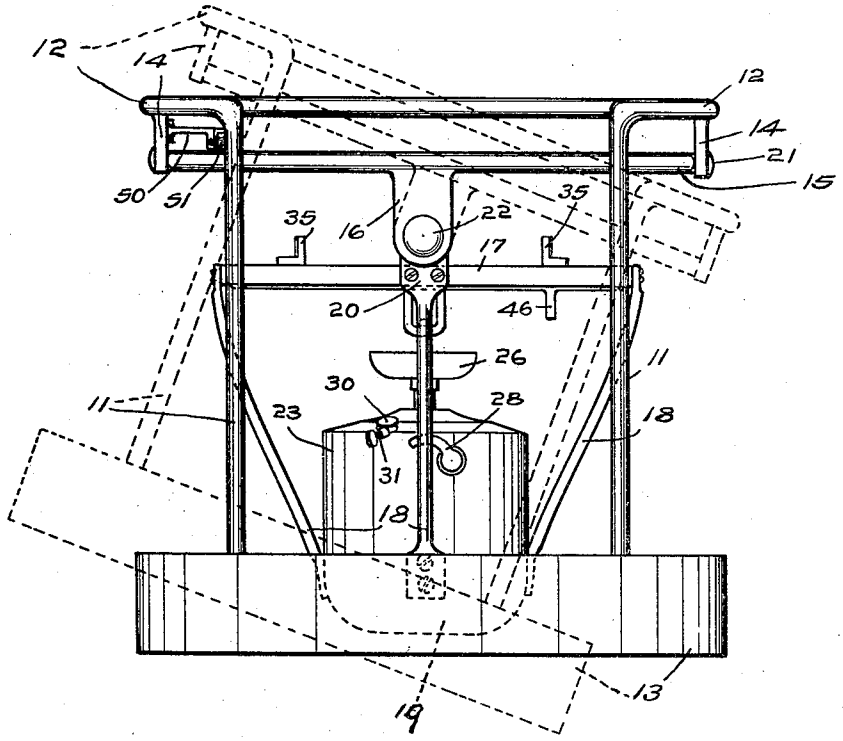
APPLICATION FILED NOV. 27, 1918.

**1,319,322.**

Patented Oct. 21, 1919.

3 SHEETS—SHEET 1.

Fig. 1



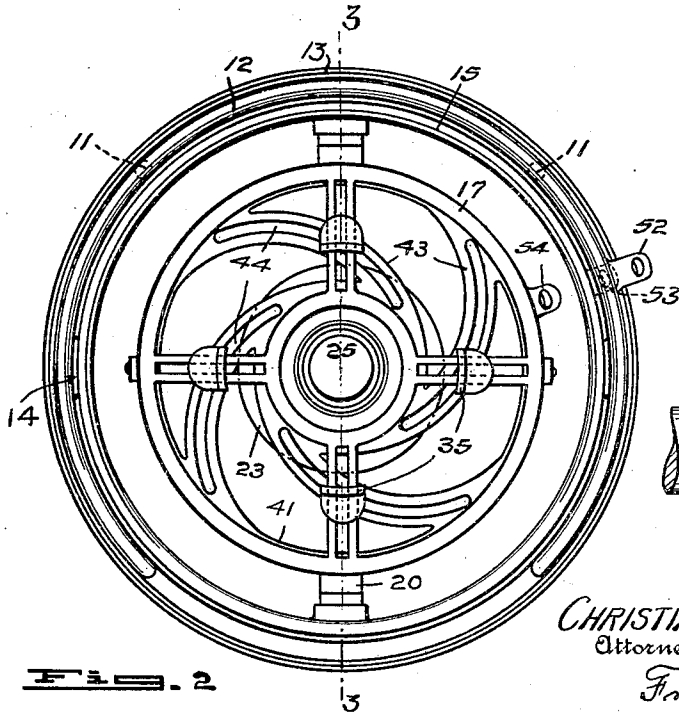




Fig. 2

Fig. 7

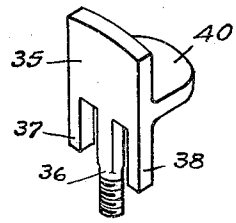
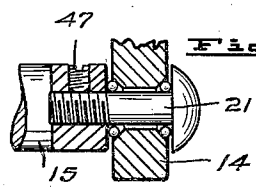



Fig. 8




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3 SHEETS—SHEET 2.

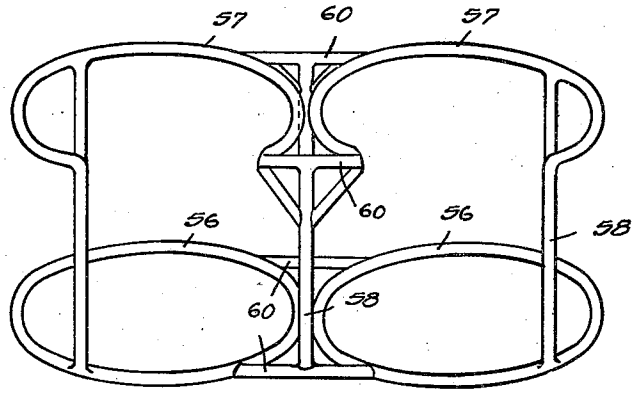



Fig. 9

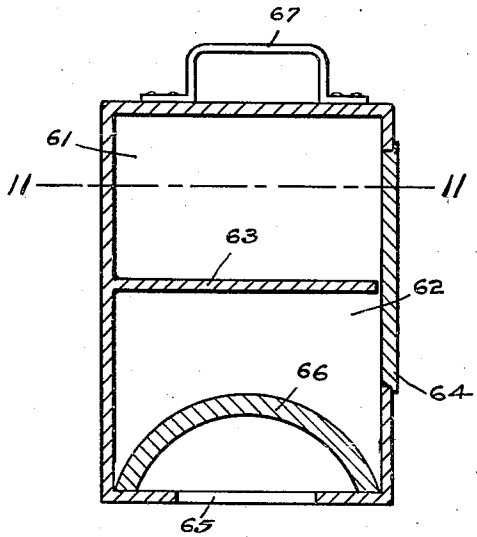



Fig. 10

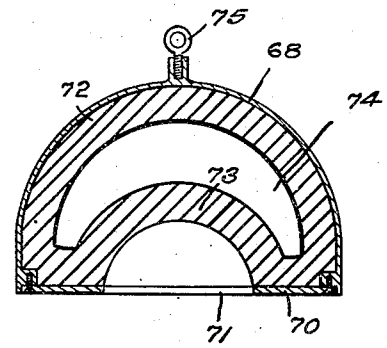



Fig. 12

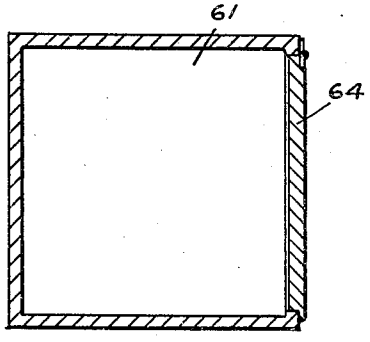



Fig. 11

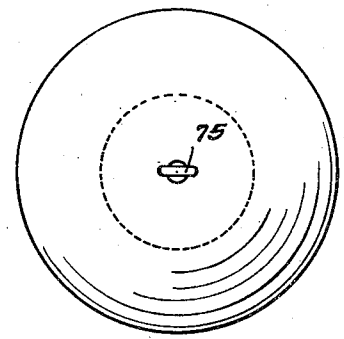



Fig. 13

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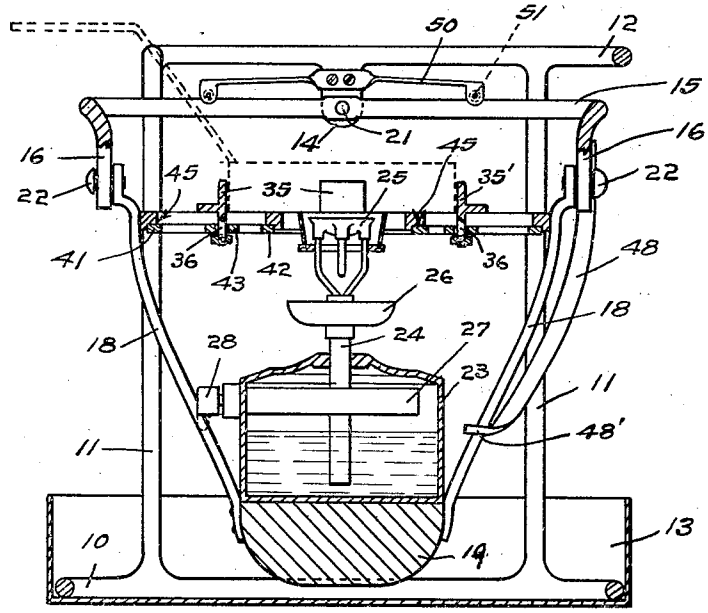
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3 SHEETS—SHEET 3.

Fig. 3



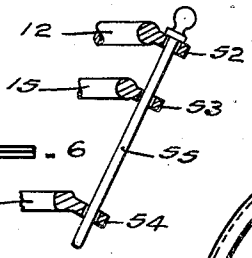
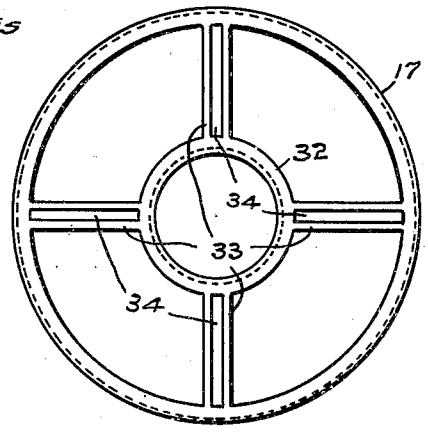




Fig. 6

Fig. 5



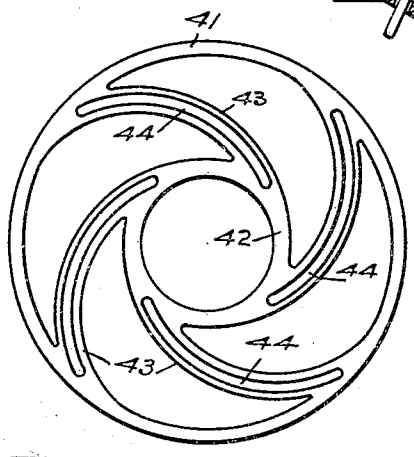




Fig. 4

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# UNITED STATES PATENT OFFICE.

CHRISTIAN J. BERGLANN, OF SEATTLE, WASHINGTON.

## STOVE.

1,319,322. Specification of Letters Patent. Patented Oct. 21, 1919.

Application filed November 27, 1918. Serial No. 264,726.

*To all whom it may concern:*

Be it known that I, CHRISTIAN J. BERGLANN, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented a certain new and useful Improvement in Stoves, of which the following is a specification.

My invention relates to improvements in stoves that are adapted for use on shipboard or in similar places where they are subjected to a tilting or rocking motion and the object of my invention is to provide a stove that is supported on gimbals which gimbals are mounted within a frame in such manner that the top of the stove will always remain in a horizontal position regardless of the angle at which the frame is turned.

A further object is to provide a novel frame structure and a novel arrangement of gimbal joints that are particularly adapted for supporting an oil stove.

A still further object is to provide simple and easily operated means for grasping and holding a cooking utensil that is placed on the stove.

Another object resides in the provision of means for locking the gimbal rings to the frame to render them inoperative thereby maintaining the top of the stove in a horizontal plane.

My invention consists in the novel construction, adaptation and combination of parts as will be more clearly hereinafter described and claimed.

I accomplish these objects by devices illustrated in the accompanying drawings, wherein—

Figure 1 is a view in elevation of a stove constructed in accordance with my invention, certain positions into which the supporting frame of the stove could be turned without tilting the top of the stove, being shown in dotted lines;

Fig. 2 is a plan view of my invention shown in Fig. 1;

Fig. 3 is a view in vertical cross-section on broken line 3, 3 of Fig. 2, certain parts being shown in elevation;

Fig. 4 is a plan view of a detail of my invention;

Fig. 5 is a plan view of one of the gimbal rings that normally forms the top of the stove;

Fig. 6 is a fragmentary view in sectional elevation illustrating means for locking the gimbal rings to the frame;

Fig. 7 is a view in perspective of a detail of my invention;

Fig. 8 is a fragmentary view partly in elevation and partly in cross-section illustrating a roller bearing joint between the frame and one of the gimbal rings;

Fig. 9 is a view in perspective illustrating a duplex frame;

Fig. 10 is a view in vertical cross-section showing an oven that is designed for use on my stove;

Fig. 11 is a view in cross-section on broken line 11, 11 of Fig. 10;

Fig. 12 is a view in vertical cross-section of a heat retaining drum constructed for use on a stove of this type; and

Fig. 13 is a plan view of the device shown in Fig. 12.

Referring to the drawings throughout which like reference numerals indicate like parts, the numeral 10 designates the circular base of a frame to which are rigidly secured at equidistant points four upright supporting legs 11 that are connected at their top ends with a circular frame member 12 that extends substantially three fourths of the way around the frame, that portion of the ring 12 at the front of the stove being removed to afford more easy access thereto.

Disposed around the base ring 10, as more clearly shown in Fig. 3, is a pan 13 which serves to catch any oil or drippings from the stove or from the oil burner that is associated therewith.

The upper circular frame member 12 is provided at diametrically opposite points with depending lugs 14 to which is pivotally connected a gimbal ring 15 by pins 21.

The gimbal ring 15 is provided at two diametrically opposite points with depending lugs 16, said lugs 16 being positioned at the front and rear sides of the frame respectively and the lugs 14 on the circular frame member being disposed at right angles to the lugs 16.

17 is a ring shaped member, as shown in Fig. 5, that is connected at four equally spaced intervals with brackets 18 which are secured to and support a weight 19, said brackets 18 being enlarged and flattened as at 20 at the front and rear sides of the stove

where they are connected to the ring 17; said brackets 18 project upwardly and outwardly from the top surface of such ring 17 to afford a means of connection with pivot pins 22 that pass through the lugs 16.

By the arrangement just described it will be readily understood that a universal joint connection is formed so that when the supporting frame is tilted in any direction the gimbal ring 17 which forms a stove grating will always be held in a horizontal position, a weight acting as a pendulum and always tending to hang vertically.

Supported upon the weight 19 and fixedly secured thereto is an oil receptacle 23 having an upwardly projecting pipe 24 that is connected at its top end with an oil burner 25 of any suitable type and is provided below the oil burner 25 with a pan 26 for the reception of oil that is used for heating the burner when the latter is first lighted.

Extending into the top of the oil receptacle 23 is a pump 27 of the reciprocating type having a handle 28 that projects outwardly from one side of the receptacle 23 and is adapted to rest upon and behind one of the brackets 18 as more clearly shown in Fig. 1, when the pump is not in use the bracket 18 preventing the handle 28 from being moved outwardly by jolting or tilting motion of the stove.

The oil receptacle 23 is provided with a suitable inlet opening 30 through which fuel may be introduced and with an air control valve 31 of well known form by which an excess pressure of air may be let out of the receptacle 23. The specific construction of the oil burner forms no part of this invention so that it will not be herein described in detail.

The ring member 17 is preferably substantially square in cross-section and is provided with a centrally disposed ring portion 32 that is rigidly connected to the outer ring 17 by radially disposed integral guide members 33 each being provided with a slot 34.

Mounted on the guide members 33 and projecting upwardly therefrom are utensil engaging brackets 35 each of which is provided with a shank 36 adapted to project downwardly through the slots 34 and with other shanks 37 and 38 adapted to project downwardly on the outer sides of the guide members 33. The rear side of each of the brackets 35 is provided with an integrally formed flat member 40 adapted to rest upon and slide over the top surface of the guide members 33.

The brackets 35 are adapted to be moved lengthwise along the guide members 33 by a suitable cam ring as shown in Fig. 4, such cam ring comprising an outer or rear portion 41 that is connected with the hub portion 42 by integral curved grooved spoke members 43, each of which is provided with a curved cam slot 44 that is adapted to fit over the lower end of the shank 36 on one of the brackets 35 so that when the cam ring is rotated with respect to the member 17 the brackets 35 will be moved lengthwise along the guide members 33 and may be caused to engage with the sides of a cooking utensil and rigidly support the same.

The cam ring is disposed directly below the gimbal ring 17 and is adapted to fit into suitable recesses 45 in the lower part of the gimbal ring which form a bearing for the cam ring so that it may be turned with respect to the gimbal ring, the shanks 36 being threaded and having nuts provided thereon below the cam ring so that the latter is held upwardly against the gimbal ring 17. The cam ring is provided with a suitable downwardly projecting lug or handle 46 by which it may be turned.

The bearings between the lugs 14 and the ring 15 and the lugs 16 and ring 17, respectively, are preferably roller bearings, as shown in Fig. 8 and the pivot pins 21 and 22 are inserted through the lugs 14 and 16 respectively and screwed into the ring 15 or lugs 20 as the case may be, and locked therein by set screws 47. The roller bearings make the device extremely sensitive to any tilting movement of the frame.

To prevent the stove from swinging like a pendulum within the frame when it is subjected to vibrations or lurching movements but not tilting movements I have provided two springs 48 and 50 respectively, the spring 48 being fixedly secured to the lugs 16 at the rear of the stove thence extending downwardly, as shown in Fig. 3, to a point opposite the burner body where it is provided with a forked end 48′ that fits over the adjacent bracket 18, the spring 48 being strong enough to prevent the stove from swinging in pendulum fashion but not being strong enough to cause the stove to be tilted when the frame is tilted.

The spring 50 is secured to one of the lugs 14 and projects in both directions therefrom, the outer ends of such spring being provided with rollers 51 that are adapted to bear downwardly on the top of the ring member 15 to act in a manner similar to the spring 48 and prevent the stove from swinging in pendulum fashion within the flame, but not to prevent it from remaining in an upright position when the frame is tilted.

In some instances it may be desired to lock the stove fixedly to the frame so that it cannot swing with respect thereto and for this purpose I provide three lugs 52, 53 and 54 which are rigidly secured to the frame ring 12, the gimbal ring 15 and the gimbal ring 17 respectively, in substantial aline-

ment as illustrated in Fig. 6, and are perforated for the reception of a pin 55 which may be thrust downwardly therethrough to securely lock the frame ring 12, the gimbal ring 15 and the gimbal ring 17 together and prevent relative movement therebetween.

The operation of this device is extremely simple, the weight 18 and the fuel receptacle 23 acting like the weight of a pendulum to always maintain the gimbal 17 which serves as a stove grating in a horizontal position regardless of the tilt that is imparted to the supporting frame.

The gimbal ring connections constitute a universal joint which permits the ring 17 to remain horizontal regardless of the direction in which the frame is tilted.

This stove is especially designed for use on ship board and various parts are proportioned so that they will allow sufficient movement to compensate for rolling and lurching of a boat under any conditions.

The brackets or lugs 35 for clamping the cooking utensils upon the top of the stove plate or ring 17 prevent such utensils from sliding over the top of the plate when the vessel lurches sidewise or when a quick movement in any direction is imparted to the stove.

In Fig. 9 I have shown by a view in perspective a duplex frame for supporting a plurality of stoves of the type shown in the preceding figures. Such frame preferably comprising two lower rings 56 and two upper rings 57 supported from the lower rings 56 by leg members 58, the upper rings 57 being cut away at the front side of the stove as herein before described in connection with the ring 12.

Where the two rings 56 and the two rings 57 are joined they are preferably secured to each other by cross bars 60 which may be welded thereto and the leg members 58 for the adjoining sides of the rings being connected with the cross members 60 so that two of the leg members 58 will serve to support the adjacent sides of two frame rings.

It will be readily understood that any number of frame rings may be connected together in the manner shown in Fig. 9.

Figs. 10 and 11 show a rectangular oven provided with an upper compartment 61 and a lower compartment 62 that are separated by a shelf 63 and having a door 64 on its front side.

The bottom side of the oven is provided with an opening 65 adapted to fit over the burner of the stove shown in Figs. 1 to 8 and the compartment 62 is provided with a curved bottom section 66 preferably of fire brick or similar material that arches upwardly over the opening 65 as shown in Fig. 10.

The oven may be provided on its top side with a suitable handle 67 by which it may be carried and such oven is particularly adapted for use on the type of stove shown in Figs. 1 to 8.

In Figs. 12 and 13 I have shown a heat retaining device comprising an outer semi-spherical shell 68 having a flat bottom side 70 wherein is provided a central opening 71 that is adapted to fit over the burner 25 when the head retaining member is placed on the stove burner, as shown in Fig. 6. The head retaining member is lined with fire brick or similar composition, that portion of the fire brick above the opening 71 being arched as at 73 and the fire brick being so arranged that an internal air chamber 74 is formed. The shell 68 is provided on its top side with a suitable eyelet 75 by which it may be carried.

This shell may be placed on the stove shown in Figs. 1 to 8 inclusive and allowed to become intensely heated and it may then be removed to any desired location and will serve to give its heat slowly and for a long period of time.

Obviously changes may be made in the forms, dimensions and arrangement of parts of my invention without departing from the spirit thereof.

What I claim is:

1. A device of the class described comprising a frame, a gimbal ring pivoted thereto, another gimbal ring pivoted to said first named ring, said last named ring forming the top plate of a stove, an oil burner suspended from said last named ring, lugs projecting upwardly from said last named ring and guided for radial movement therein and a rotatable cam plate for moving said lugs.

2. A device of the class described comprising a frame having a circular frame member at the top thereof, a ring of smaller diameter than said frame member pivoted thereto at diametrically opposite points, a stove plate of smaller diameter than said ring pivoted to said ring at diametrically opposite points, the line passing through said last named pivots being at right angles to the line passing through said first named pivots, an oil burner rigidly supported in suspended position below said stove plate, lugs guided for radial movement by said stove plate and projecting upwardly therefrom, and a cam plate rotatably associated with said stove plate for moving said lugs.

3. A device of the class described comprising a frame having a circular frame member at the top thereof, a ring of smaller diameter than said circular frame member pivoted thereto at diametrically opposite points, a stove plate of smaller diameter than said ring pivoted to said ring at diametrically opposite points which are at right angles to the first named pivots of said ring, radial guide members formed in said

stove plate, lugs movable along said guide members and projecting upwardly from said plate, and a circular member guided for oscillation on the bottom side of said plate and having a plurality of curved cam slots that engage with said lugs and move said lugs simultaneously toward or away from the center of said stove plate and an oil burner rigidly supported in suspended relation below said stove plate.

In witness whereof I hereunto subscribe my name, this 21st day of November, A. D. 1918.

CHRISTIAN J. BERGLANN.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**