

W. H. WILDER.

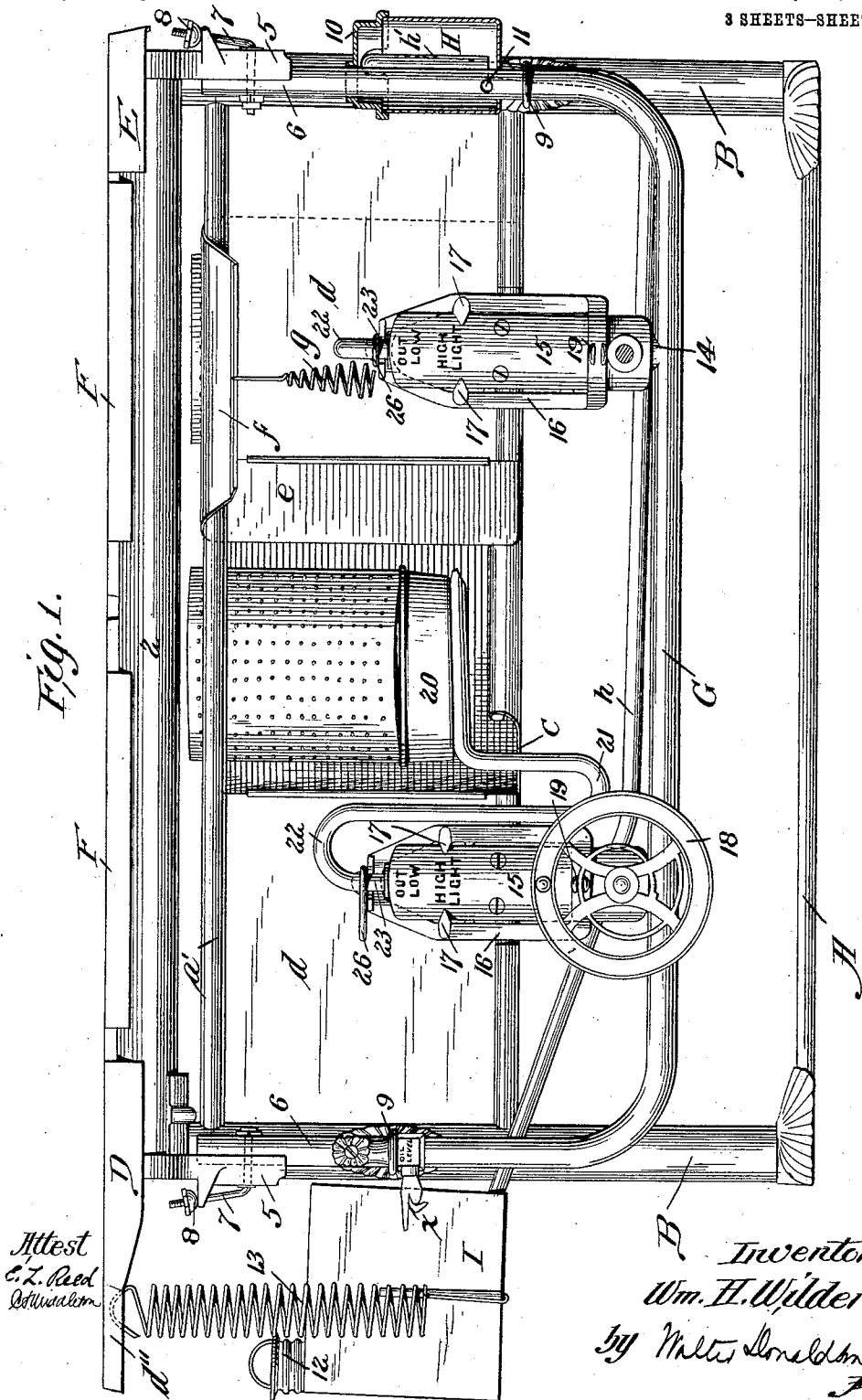
OIL STOVE,

APPLICATION FILED APR. 26, 1901.

1,062,677.

Patented May 27, 1913.

3 SHEETS—SHEET 1.



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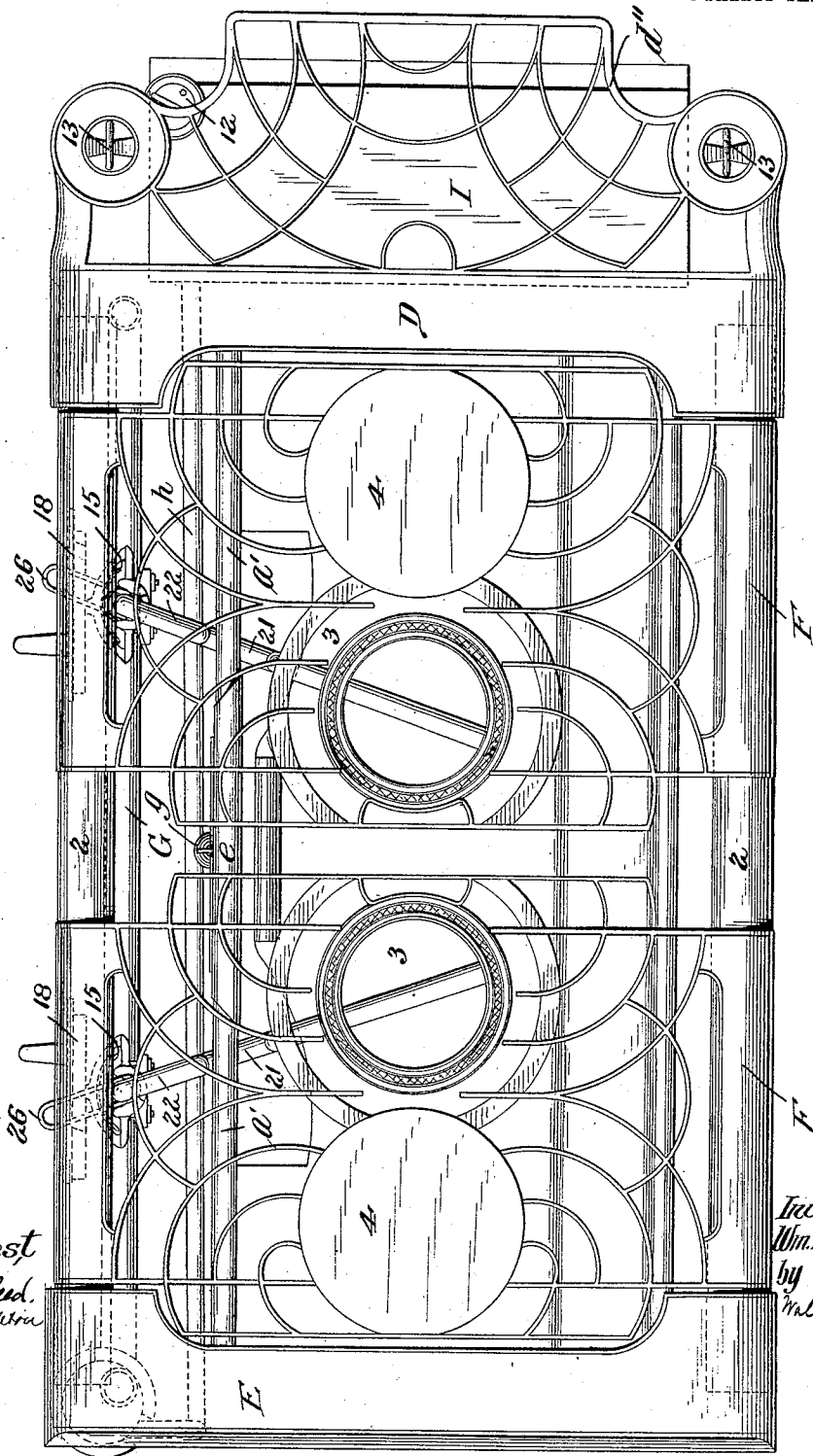
3 SHEETS—SHEET 2.

Fig. 2.

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3 SHEETS—SHEET 3.

Fig. 3.

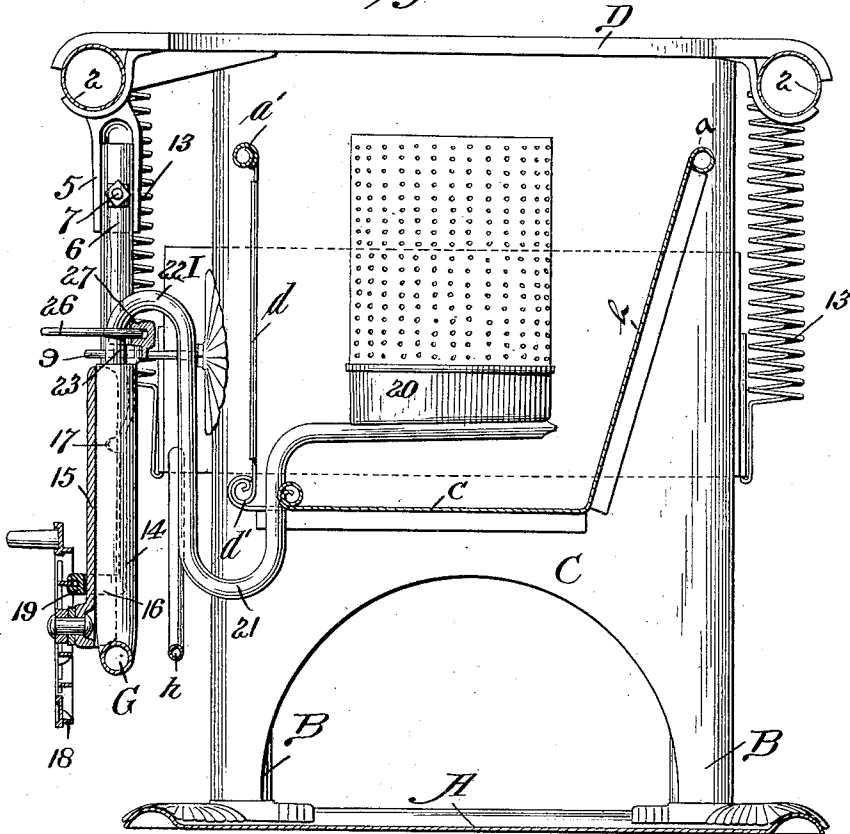


Fig. 4.

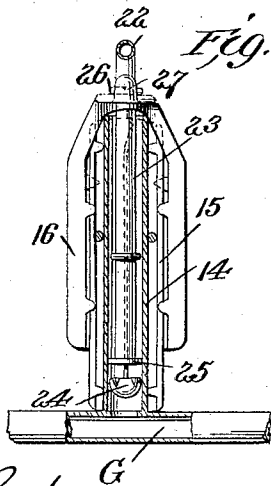
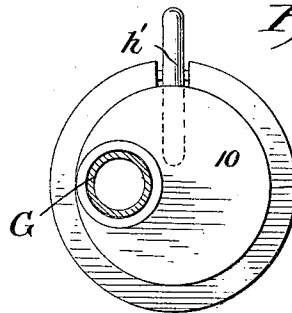


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM H. WILDER, OF GARDNER, MASSACHUSETTS, ASSIGNOR TO CENTRAL OIL
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OIL-STOVE.

1,062,677.

Specification of Letters Patent.

Patented May 27, 1913.

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To all whom it may concern:

Be it known that I, WILLIAM H. WILDER, citizen of the United States, residing at Gardner, Massachusetts, have invented certain new and useful Improvements in Oil Stoves, of which the following is a specification.

My invention relates to oil stoves of the class patented to me December 7, 1897, #595231 and disclosed in a number of patents granted to me since, showing modified constructions, and in which there is a free oil level between the reservoir and the burner with means for varying the height of oil in the burner bowl to regulate the flame or put in out entirely.

My invention contemplates the movement of the burner as the preferred construction in relation to the reservoir but is not limited in this respect as the parts may both be movable in relation to each other, or one may be fixed and the other movable or the parts may have movement for other purposes.

It has been my aim to provide in a stove having a movable burner a connection free from leakage and rendering unnecessary packed joints and the like. In carrying out this feature many other important improvements have followed, such as an independent movement of the burner horizontally, productive of many advantages; a pipe line supporting the burner or burners and having its supply come from a movable reservoir self adjusting to maintain the level of the oil at one point and many other features which will be broadly and specifically stated in the claims.

In the accompanying drawings, Figure 1 is a front elevation. Fig. 2 a plan view. Fig. 3 a sectional view taken laterally and extending alongside one of the burners, while Figs. 4 and 5 show details of construction.

As illustrated in the drawings, there is a base plate A with corner posts B extending therefrom, these posts being connected at the ends by a web of sheet iron C intended to strengthen the structure and to form the ends of a partially inclosed part in which the burners are located. Extending between the corner posts at the back is a tubular support a and from this depends a sheet metal shield of angular form as shown in Fig. 3 and consisting of a back plate b and a bottom plate c preferably in one piece. At the

front of the stove between the corner posts extends a tubular support a' and this serves to sustain the two sections of sheet iron serving as the front wall of the cabinet and shown at d. The lower ends of the sheet metal portions d are curled into tubular form as shown at d' and these are secured in the corner posts and to further strengthen the construction the front edge of the bottom plate e is curled over as shown in Fig. 3 upon the tubular lower end of the front plates d. The break or opening between the plates d is closed by a sliding door e which has a turned over upper edge f resting on the support a' and by means of a handle g this is moved to open or close.

The top of the stove comprises end castings D and E and secured to these castings are two tubes 2, 2, made of sheet metal bent into tubular form and extending between the castings and these tubes serve as a support for the grate sections F. These sections are duplicates of each other and their front and rear edges are partially curved to fit the rounded upper surface of the tubular supports 2. The grate sections are made of open work so as to allow for the ready passage of the heat but just at the center there is an opening as shown at 3, while alongside of this opening is a disk of metal imperforate and made a part of the grate as shown at 4. It will be seen from this construction that the burner may be adjusted to bring it directly beneath the opening 3 when it is desired to get the full effect of the heat or when it is desired to deflect or divide the heat the burner may be swung beneath the imperforate section 4. The grate sections being removable and reversible may be arranged as shown in Fig. 2 with the openings 3 3 alongside of each other or they may be reversed so as to bring the imperforate sections 4 4 alongside of each other or these parts may be arranged alternately as the circumstances of the case may require. The casting D has an extension d'' of skeleton work which projects out sufficiently to protect the reservoir located directly beneath it and supported therefrom as will be hereinafter described.

The supply pipe from which the burners are fed is shown at G in Figs. 1 and 3. This pipe supports the burners and I have aimed to make this adjustable vertically at each end and laterally so as to level up the burn-

ers when the stove is supported upon an uneven surface. In stoves of this class where a bowl is used containing the oil, the tilting of the stove, due to the uneven surface is detrimental and to overcome this I use a casting 5 at each end of the front of the stove and support the vertical portions of the pipe G as shown at 6 by these castings, the castings being hollowed out on one side to receive the pipe, and the adjustment is effected by means of an angularly bent wire 7, having threaded ends with a nut 8 upon the upper end which allows the ready adjustment of the pipe vertically. The upper ends of the castings 5 are made round to fit in to the open ends of the tubular support 2 and this allows the casting to have a turning movement. This permits lateral adjustment such as the swinging in or out of the pipe G toward or from the stove when the unevenness is in this direction. The pipe is sustained in its adjusted position by screw eyes, the eye encircling the pipe and the screw threaded end engaging the post B and held by a jam nut. By loosening the jam nut the pipe G may be adjusted in or out. These screw eyes are shown at 9. This also provides means of adjusting the burner and reservoir to a level.

In order to provide a siphon feed for the pipe G I arrange a chamber or cup H on the vertical extension of the pipe G as shown in Figs. 1 and 5 serving as a trap. This cup receives the oil from the end of the feed pipe *h* which extends to the reservoir. The end of this pipe is bent over as shown at *h'* and depends into the cup H so as to permit a fulcrum for the pipe *h*, which acts as a lever support for the reservoir I, the cup having a cover 10. The oil runs from the cup H through the opening 11 in the pipe G into the pipe and from thence it is fed, as will be hereinafter explained, to the burners.

Heretofore I have secured the maintained level of oil by the use of an inner reservoir feeding into an outer oil chamber in which the level of oil was maintained automatically, but in the present case I have dispensed with this form of oil chamber as heretofore used and instead I use a simple oil chamber shown at I, having a filling orifice at 12, and I secure the maintained oil level by supporting the reservoir from the casting *d'* by means of graduated springs 13. These springs are connected to the oil chamber so as to be readily detachable and they are so adjusted in tension to a predetermined level that the weight of oil as it is poured into the can will depress it automatically to secure proper level and as the oil is consumed the level will be maintained by the rising of the can due to the diminishing weight of oil. I may also use in this connection a series of weights on the reservoir, adding or removing the weights as circumstances may re-

quire. This will permit of the burners being controlled simultaneously at the reservoir instead of by raising and lowering the burners separately. The oil flows through the feed pipe *h* to the siphon cup H, the end of the pipe *h* simply being hooked over the edges of the cup H so as to be readily detachable.

The supply pipe G has a vertical section extending therefrom for each burner as shown at 14, Figs. 3 and 4, and secured to the face of this section is an indicator plate 15 containing the words Out, Low, High, Light. An indicator frame 16 embraces the pipe 14 and the plate 15 and is provided with indicating fingers 17. The indicator frame is movable vertically by a scroll cam 18 engaged by two projections on the frame as shown at 19 and in the turning of the wheel the indicator frame is raised or lowered and the fingers will indicate the position of the burner. I have so adjusted the scroll to the indications that each half turn thereof will bring the burner into one of the positions indicated, thus making a very effective construction and one readily operated in the dark as one half turn from light will lower the burner to high; another half turn to an intermediate position between high and low; another half turn to low and another to out.

The connection between the supply pipe G and the burner is also a siphon connection. The burner bowl 20 does not differ from the bowls heretofore shown in my former patents and is made of sheet metal with a supply at two points, the points being the lowest in the bowl so as to be capable of draining. The siphon pipe or conduit directly supplying the bowl with oil has a double bend as shown at 21 and 22 and the vertical portion 23 is of such diameter as to permit its insertion into the pipe 14 and of such depth as to preserve the siphon. It is necessary to charge the burner by reason of the siphon action and to do this I allow the oil to flow into the pipe G, and it will of course rise into the pipes 14. I then drop into the pipe 14 a temporary valve 24 consisting of a semispherical head with a wire stem bent irregularly. This closes the opening between the pipe and its upright extension 14. I then insert the end 23 of the burner pipe into the pipe 14; placing it over the projecting end of the wire stem of the valve 24. A flange is formed on the end of the pipe 23 as shown at 25 and this fits the wall of the pipe 14 sufficiently to act as a piston so that as the burner pipe 23 is forced down the result is to force the oil in the pipe 14 over the bend 22 and thus charge the siphon. When the burner pipe is forced down it goes a little beyond the normal limit and as soon as it is raised it lifts the valve 24 above its seat as the at-

tachment between the parts is secured by the bent stem which engages the interior of the pipe 23 frictionally and therefore keeps it open. It will thus be seen that the valve is practically only in use during the charging of the siphon. The burner pipe is raised with the burner in the movement of the indicator frame, to which it is removably connected by a loop 26 fastened to the burner pipe and having one end extending beneath a tongue 27 on the indicator frame connecting or locking the parts in this position, and when it is desired to remove the burner it may be swung to the front to free the end of the loop from the tongue 27. The opposite end of the loop extends to the front and is used as a handle to swing the burner laterally. The burner pipe is thus supported by the indicating frame and has turning movement in relation thereto. This turning movement is desirable in that the burners may be swung close together when it is desired to concentrate the heat of both burners, or they may be swung apart, or they may be swung entirely through the opening when the door *e* is open so as to be accessible for cleaning purposes. The upper end of the indicator frame partially encircles the pipe so as to provide this support. When the burner is swung to the front, the combustion tube strikes against the support *a'* which tilts it and it is then in position for lighting.

I do not limit myself to a spring reservoir as my invention contemplates any form of mechanically maintained oil level.

Many features of the present construction are also applicable to a stove arranged with the burners below the oil level and hence not requiring a siphon and my invention is broad enough to include such a construction.

I may indicate the oil level in the reservoir by a finger carried on the pipe line as at *x* or in any other suitable manner.

I have discovered that by the use of the trap or siphon connection at H that any abnormal rise and fall of the oil by the vibration of the reservoir is entirely neutralized and no corresponding effect upon the flame is observed.

A novel feature of the invention also resides in the difference in capacity between the pipe line G and the pipe line *h* as I have found that the use of a pipe of smaller capacity between the reservoir and the main line gives a retarding effect and a more uniform action. I have also found that the use of an open top stove with moving burners and removable grate sections is a feature of great importance and hardly possible with a stove having a sheet metal top as the movement of the burners beneath the top would blister it and cause it to buckle, while in the present case the sections of the top

are of cast metal capable of being removed entirely and to leave an open unobstructed passage from end to end and side to side of the stove.

It will be observed that the pipe 14 constitutes an open stand-pipe making a joint with the vertical portion 23 of the siphon, and in the claims I will refer to the pipe 14 as a stand-pipe and connection between pipe 14 and 23 as an open joint.

What I claim is:

1. In an oil stove, a burner bowl, a maintained oil level reservoir, a free oil passage between constantly open, a siphon conduit carrying the burner bowl, and vertically movable independent of the reservoir to raise and lower the burner bowl in relation to the oil line, whereby the raising of the bowl will drain it, and the lowering will fill it partially or wholly with oil, substantially as described.

2. In an oil stove, a burner bowl, a maintained oil level reservoir, a vertically movable siphon conduit carrying the burner bowl extending above and below said bowl, and movable independently of the reservoir, a movable fuel supply connection between the reservoir and the siphon conduit, substantially as described.

3. In an oil stove, a burner bowl, a maintained oil level reservoir, a vertically movable siphon conduit carrying the burner bowl extending above and below said bowl, and movable independently of the reservoir, an automatically adjustable fuel supply connection between the reservoir and siphon conduit, substantially as described.

4. In an oil stove, a reservoir, a burner and a conduit therebetween having an opening, said burner having a movable siphon connection with the opening of the conduit, the oil level in the reservoir being below the top of the burner and the opening, substantially as described.

5. An oil stove comprising a reservoir having a maintained oil level, a burner bowl having its top above said oil level, an intermediate chamber, a pipe line between said chamber and reservoir including a siphon, and an outlet from the chamber whereby leakage and overflow are prevented, substantially as described.

6. An oil stove comprising a burner, a reservoir adapted to maintain the level of oil, a pipe line, a stand pipe thereon having an opening above the oil level and the burner having a pipe connection depending into the stand pipe and movable in relation thereto, substantially as described.

7. An oil stove comprising a burner, a reservoir adapted to maintain the oil at a constant level, a pipe line, a stand pipe thereon having an open end above the oil level and an extension on the burner adapted to depend into the stand pipe and movable

in relation thereto, said burner and its extension being removable, substantially as described.

8. An oil stove comprising a reservoir adapted to maintain the oil at a constant level, a pipe line, a stand pipe thereon having its open end above the oil line and a burner having a pipe extension depending into the stand pipe and having a swinging movement in relation thereto, substantially as described.

9. An oil stove comprising a reservoir adapted to maintain the oil at a constant level, a stand pipe having an open end above the oil line, and a burner bowl having a pipe extension, one end being provided with means for movably supporting it on the stand pipe and adapted to make an open connection with the open end of the stand pipe while the opposite end supports the burner, substantially as described.

10. An oil stove comprising a vertically movable burner, an automatically movable reservoir, and an intermediate supply means comprising a fuel supply pipe movable with said reservoir, a supply pipe communicating with said vertically movable burner, and an interrupted connection between said pipes, substantially as described.

11. An oil stove comprising a frame, an independent supply pipe adjustable in relation thereto, an independently movable burner supported by the adjustable supply pipe and a reservoir for supplying the supply pipe with oil, substantially as described.

12. An oil stove comprising a frame, a burner, a reservoir, a support for the burner adjustable vertically at its ends to secure a proper level or to adjust the burner in relation to the reservoir, and having adjustment laterally, substantially as described.

13. In an oil stove a burner, a supply pipe supporting the same, a movable reservoir and an interrupted connection between the reservoir and the supply pipe comprising a pipe fixedly connected to the reservoir at one end and having an interrupted connection with the supply pipe at the other end adapted to permit of vertical movement of the reservoir with relation to the burner, substantially as described.

14. In an oil stove, a pipe line, a burner supported thereby, a spring supported reservoir, a discharge pipe therefor, and a pivotal connection between said discharge pipe and the main pipe line, substantially as described.

15. An oil stove comprising a supply pipe G, a burner movable in relation thereto, an oil chamber H, and a suspended reservoir having a loose connection therewith and a communication between the chamber and the supply pipe, substantially as described.

16. An oil stove comprising a burner, a vertically movable reservoir an interrupted

supply means and a plurality of siphon connections in said supply means between the reservoir and burner, substantially as described.

17. In an oil stove, a main pipe line provided with an open stand pipe, a burner pivotally supported outside of the line of the stove frame in said stand pipe and adapted to swing upon its pivot from beneath the stove top, a suitable reservoir and pipe connections for supplying the burner with oil, substantially as described.

18. In an oil stove, a burner comprising a bowl and combustion tubes, a support for said burner permitting it to swing and means in the path of the combustion tube for tilting the same in the swinging of the burner for the purpose set forth.

19. An oil stove comprising a removable burner, a reservoir having a maintained oil level, a siphon connection for the burner permanently connected to and freely removable with said burner, a support therefor and means for raising and lowering the burner, substantially as described.

20. An oil stove comprising a pipe line located outside of the line of the stove frame, a stand pipe extending therefrom, a burner pivotally supported on the stand pipe and projecting when in operation within the stove beneath the top thereof, the said pipe line being horizontally arranged so as to support one or more burners, substantially as described.

21. An oil stove comprising a reservoir having a maintained oil level, a burner, a feed pipe, said burner having a siphon connection with the feed pipe which also forms a pivot upon which the burner swings and in relation to which it moves vertically independently of the reservoir, substantially as described.

22. An oil stove comprising a burner, an independent supply pipe G supplying the same, a movable reservoir, a delivery pipe leading therefrom and a siphon connection between the supply pipe and delivery pipe, substantially as described.

23. In an oil stove, a burner with means for moving it up and down so as to approach or recede from the top of the stove and having a horizontal swinging movement from beneath the stove top, substantially as described.

24. An oil stove comprising a reservoir, a supply pipe located outside the stove top and extending horizontally thereof along the front of the stove and a burner loosely supported therefrom to one side thereof so as to have swinging movement, substantially as described.

25. An oil stove comprising a reservoir having a maintained oil level, a supply pipe having a horizontal portion and a vertical extension and a burner pivotally connected

with said vertical extension, said extension forming a stand pipe with its end above the oil level, substantially as described.

26. An oil stove comprising a burner a maintained oil level reservoir, a supply pipe, a vertical extension thereof forming a stand pipe, an indicator carried thereby and showing the position vertically of the burner as to the oil therein, substantially as described.

27. An oil stove comprising a maintained oil level reservoir, a burner, a supply pipe, a vertical extension therefrom, an indicator plate carried thereby, and a movable indicator frame pivotally supporting the burner, substantially as described.

28. An oil stove comprising a burner, a supply pipe, a vertically movable indicator frame carrying the burner and guided by the supply pipe and a scroll cam for operating the frame, substantially as described.

29. An oil stove comprising a movable burner a vertically movable indicator frame connected with the burner, a supply pipe and a scroll for raising and lowering the burner, said scroll being adapted to have a succession of half rotations to bring the burner into the several positions assumed in use, substantially as described.

30. An oil stove comprising a burner, a horizontal supply pipe and a siphon connection between comprising a vertical extension of the supply pipe and a vertically movable siphon pipe on the burner having means for charging the siphon, substantially as described.

31. An oil stove comprising a frame, a cross piece *a'* supported from said frame, a burner horizontally movable and having its combustion chamber extending above and below the level of the cross piece, substantially as described.

32. An oil stove comprising a burner, a supply pipe, a siphon connection between said parts comprising a vertical extension of the supply pipe having its open end above the oil line and a siphon pipe on the burner with means for temporarily closing the opening to the vertical extension to permit the charging of the siphon, substantially as described.

33. An oil stove comprising a burner, a reservoir, a supply pipe, a vertical extension on the supply pipe constituting a stand pipe, the burner having a siphon fitted to said stand pipe and means for restricting the entrance to the stand pipe for the purpose of charging the siphon through the depression of the burner, substantially as described.

34. In an oil stove, a burner, a reservoir, a supply pipe *G* supporting the burner and means for gradually retarding the flow of the oil between the reservoir and the pipe supply comprising a feed pipe of reduced diameter and an interrupted pivoted con-

nection between said supply and fuel pipes, substantially as described.

35. In an oil stove having a maintained oil level, a stove frame, a burner, a frame vertically movable, said burner being pivoted thereon so as to swing outside the stove frame, substantially as described.

36. In an oil stove, a swinging freely removable burner, a vertically movable frame therefor, and a locking connection between the burner and the said frame.

37. In an oil stove, a swinging freely removable burner, a vertically movable frame therefor, and a detachable connection between the burner and the said frame.

38. The combination in an oil stove of a burner, a vertically movable frame supporting the same and a locking connection between the frame and the burner, the said burner having horizontal movement to detach the locking connection, substantially as described.

39. In an oil stove, a burner and reservoir, a supply pipe connected to the reservoir and having a horizontal portion with upturned ends extending above the oil level in the reservoir, the burner being normally supported at a lower level upon the horizontal portion, substantially as described.

40. In an oil stove, a burner, a reservoir and an intermediate supply pipe having upturned open ends with means for adjustably supporting the pipe ends, substantially as described.

41. An oil stove comprising a burner, a reservoir, a supply pipe and one or more open stand pipes extending from said supply pipe above the oil level and a siphon connection for the burner with said stand-pipe, substantially as described.

42. An oil stove comprising a burner, an oil reservoir maintaining a constant level, an oil supply pipe, a stand pipe extending therefrom, and a siphon pipe connection between the stand pipe and the burner, said siphon pipe being vertically movable, one member of the siphon pipe engaging the stand pipe and the other carrying the burner, substantially as described.

43. An oil stove comprising a burner, an oil reservoir maintaining a constant level, an oil supply pipe *G*, a stand pipe thereon and a siphon pipe between the stand pipe and the burner, said siphon swiveling in the stand pipe.

44. In an oil stove, a burner comprising a combustion chamber, said burner being adapted to move laterally and an obstruction in the path of the combustion chamber adapted to tilt it for ignition.

45. An oil stove comprising a maintained oil level reservoir, a supply pipe, a vertical extension thereof forming a stand pipe, an indicator carried thereby and a pivoted burner located to one side of said supply

pipe, said indicator being adapted to occupy stated locations so as to indicate the several positions assumed in use, substantially as described.

- 5 46. An oil stove comprising a suitable frame, a supply pipe G, a burner pivotally and adjustably supported thereby and having a siphon connection therewith, an automatically movable reservoir for maintaining
10 the oil level at a predetermined point, and

a siphon connection between the reservoir and the supply pipe G, substantially as described.

In testimony whereof, I affix my signature in presence of two witnesses.

WILLIAM H. WILDER.

Witnesses:

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FRED COOLIDGE.

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