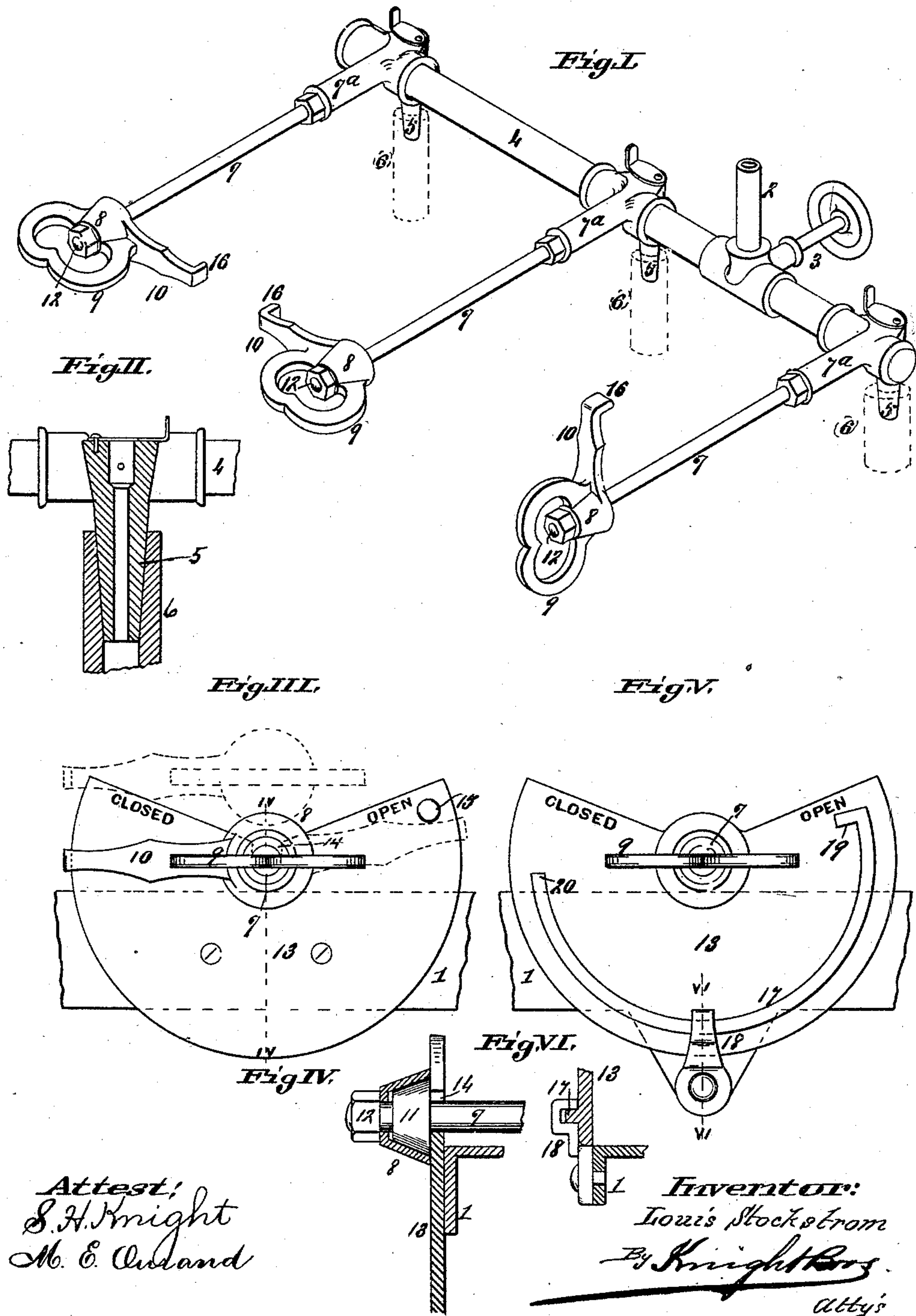


(No Model.)

L. STOCKSTROM.  
VAPOR STOVE.

No. 462,174.

Patented Oct. 27, 1891.



Attest:  
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# UNITED STATES PATENT OFFICE.

LOUIS STOCKSTROM, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO  
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## VAPOR-STOVE.

SPECIFICATION forming part of Letters Patent No. 462,174, dated October 27, 1891.

Application filed May 9, 1891. Serial No. 392,176. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS STOCKSTROM, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Vapor-Stoves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to certain improvements intended more particularly to be used on that class of vapor-stoves wherein gasoline is used as a fuel, and which is conveyed from a tank through a vaporizing-chamber, from which the carbureted air is conveyed to a burner, where it is ignited.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a perspective view illustrative of my invention. Fig. II is an enlarged vertical view through one of the nozzles through which the oil passes from the horizontal into the vertical pipes. Fig. III is an enlarged end view of one of the valve-stem heads, showing also the dial in connection with which the valve-stem head works. Fig. IV is a vertical section taken on line IV IV, Fig. III. Fig. V is a view similar to Fig. III, but showing a modification. Fig. VI is a section taken on line VI VI, Fig. V.

Referring to the drawings, 1 represents part of the frame of the stove.

2 represents the pipe leading from the oil-reservoir, (not shown,) which may be provided with a valve 3 and which communicates with a horizontal pipe 4, from which the oil passes to the burners of the stove (not shown) through nipples 5 and vertical pipes 6, the nipples fitting loosely in the open upper ends of the pipe 6, so that the pipe 4 can be removed with the tank when the latter is to be filled.

7 represents the stem of valves which fit in necks 7<sup>a</sup> of the pipe 4 and control the passage of the oil through the nipples. On the outer ends of the stem 7 are heads 8, provided with thumb-pieces 9, by which the valves may be turned, and also preferably provided with extending fingers 10, as shown in Figs.

I and III. The heads 8 are made hollow and of conical shape to fit over similar shaped collars 11 on the valve-stems. (See Fig. IV.) The extreme ends of the valve-stems are threaded to receive nuts 12, and by tightening these nuts the heads 8 are pressed against the collars 11, and thus the heads 8 are securely held on the valve-stems with a means for adjusting them, which is done by simply loosening the nuts 12 and turning the heads to the proper positions and then tightening the nuts again.

13 represents the dial-plates, in connection with which the fingers 10 of the valve-stem heads 8 operate. There is a plate for each valve-stem, and in my preferred construction each plate has a simple notch, as indicated at 14, Figs. III and IV, to receive its valve-stem 7 and afford a support for the stem. Each dial-plate has a pin or stop 15, against which the finger 10 impinges when the valve is moved to its open position. One of the purposes of this pin is to limit the travel of the finger, and consequently the extent to which the valve can be opened, and avoids the possibility of the operator turning the valve-stem past the signal "Open" and on around to the signal "Closed," when the finger would indicate that the valve was closed, when, in fact, it would be wide open. The pin avoids any possibility of such occurrence.

In this class of vapor-stoves the construction is such that the tank, together with the feed-pipes 2 and 4 and the valves, are removed from the stove for the purpose of filling the tank, as already mentioned, and it will be seen that these parts cannot be removed except by lifting them in a vertical or upwardly direction for the reason that the nipples 5 fit into the pipes 6. It is essential that all valves should be closed before the tank is removed for the purpose of filling it, so that no gasoline can escape, and one of the objects of this invention is to provide a means which either prevents the tank from being removed until all of the valves are closed or acts to remind the operator when about to remove the tank that all of the valves are not closed, and to accomplish this I in my preferred form of con-



struction form a lug or projection 16 on the outer end of each finger 10. This lug fits over the periphery of the dial-plate 13, as shown clearly in Fig. III. As the valve-stem is turned, the lug will travel around the periphery of the plate, and it will be understood that as the tank, together with the parts removed with it, has to be lifted in a vertical direction the lug on the finger will prevent this removal of the tank except when the valve is turned to its closed position, for not until then will the lug on the finger leave the periphery of the dial-plate as the valve-stem leaves the notch 14. When the valves are turned to their closed positions, the tank, with the other parts, may be readily lifted off from the stove, and after the tank has been filled the parts are replaced and ready for use. In addition to the function ascribed to the pin 15 it also serves to prevent the tank and other parts being removed when the valves or any one of the valves is open for any effort to remove the parts in an upwardly direction. When any one of the fingers would be on the open side of the dial-plates and above a horizontal line drawn through the valve-stem the finger would impinge against its pin 15 and prevent the removal of the parts. The pin 15 is not, however, absolutely essential, for the movement of the valve might be so limited in the open direction that the finger would not move to a horizontal line drawn through the valve-stem, and then it is obvious that the tank and other parts could not be removed when any one of the valves were open, even in the absence of the pin 15.

In Figs. V and VI, I have shown a modification wherein the dial-plate 13 is rigidly and permanently secured to the stem 7, so as to be turned with and by the stem. In this form of the invention the dial-plate has a semicircular flange or rib 17, engaged by a hook 18, secured to the frame 1 of the stove. In turning the valve to open it the movement is regulated by a projection 19 on the rib 17 coming against the hook 18, and when the valve is closed the end 20 of the rib will pass out of engagement with the hook 18, and then the parts may be removed to fill the tank.

Under certain circumstances it is of advantage to be able to remove the tank from the stove immediately without being obliged to take the time to first close all valves, which operation will consume several seconds at least. For instance, a valve may have been opened through error without lighting the burner to consume the gasoline fed by the valve, or the tank may become leaky and the gasoline finding its way to the lower part of the stove may accidentally be lit and make a large flame, endangering the contents of the tank and making it advisable to remove the tank with the least possible loss of time. In order to enable the operator to do so with a stove provided with my invention and yet retain the advantages thereof to a very great

extent, I prefer to construct and arrange the several parts which act to prevent the tank from being removed while a valve is open in such a manner that if the tank is removed with a sudden jerk or more force than is generally applied for that purpose the parts will yield enough to allow the tank being removed without first closing the valve. This may be accomplished in quite a number of different ways, which will readily suggest themselves, by constructing one or more of the parts in such a manner that they will yield or spring enough to allow them to disengage whenever a sudden jerk or more force is applied than is generally the case, but not otherwise.

It is obvious that other means than the finger and dial-plate may be employed without deviating from the spirit of my invention, which consists in providing the valve-stem with a finger or equivalent device, which finger, by the movement of the valve-stem to which it is attached, is made to engage with another hook or plate attached to an immovable part of the stove whenever the valve is opened and made to disengage whenever the valve is closed.

I claim as my invention—

1. In a vapor-stove, the combination of a stove-frame, a tank, a feed-pipe, and a valve, the tank, feed-pipe, and valve connected together and adapted to be removed together from the stove-frame, a finger and a plate, one attached to the valve and moving with the valve as it is opened, the other attached to the stove-frame, the finger and plate adapted to engage so as to hold the tank, feed-pipe, and valve to the stove-frame when the valve is opened, and to disengage when the valve is closed, substantially as and for the purpose set forth.

2. In a vapor-stove, the combination of a frame, a tank, a feed-pipe, and a valve, the tank, feed-pipe, and valve connected together and adapted to be removed together from the stove-frame, a finger provided with a lug and connected to the valve-stem, and a dial-plate secured to the frame of the stove and adapted to act in connection with the finger to hold the tank, feed-pipe, and valve to the stove-frame when the valve is open and permit the tank, feed-pipe, and valve to be removed from the stove-frame when the valve is closed, substantially as and for the purpose set forth.

3. In a vapor-stove, the combination of a stove-frame, a tank, feed-pipe, and valve connected together and adapted to be removed together from the stove, a finger having a lug, and a dial-plate having a pin 15, substantially as and for the purpose set forth.

4. In a vapor-stove, the combination of the supply-pipe, cones on the stems of the valves for controlling the passage of oil through said pipe, cone-shaped heads fitting over cones on the valve-stems, and nuts on the valve-stems for tightening the heads onto the cones of the valve-stems, substantially as set forth.



5. In a vapor-stove, the combination of a supply-pipe, cones formed on the stems of the valves controlling the passage of oil through said pipe, fingers provided with hollow heads  
5 fitting over the cones on the valve-stems, nuts on the valve-stems for tightening the heads on the cones, thumb-pieces 9 on the heads,

and disks 8, substantially as and for the purpose set forth.

LOUIS STOCKSTROM.

In presence of—

E. S. KNIGHT,  
J. M. MAROT.