To all whom it may concern:

Be it known that I, John L. Levering, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Gas-Stove and Hot-Water Heater, of which the following is a specification.

This invention relates to a new and useful water heater and more particularly to that type which is designed for substantially instantaneous water heating and has for an object to provide a heater that may be readily carried and moved from one place to another with the greatest of ease and be quickly connected by anyone, to any well known means of water supply.

It has for a further object to provide a heater which may be instantly attached to a water supply, for example the spigot of an ordinary bath tub, whereby when the burner is lighted and the cold water turned on, it will pass through the heater and be delivered to the tub heated to a high degree.

It further consists of an inclosing casing connected to a base or burner portion by a novel locking and releasing means whereby the casing may be easily unlocked and removed, thus leaving the remaining section as a complete burner, which may be utilized for other purposes.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

For the purpose of illustrating my invention I have shown the preferred form used by me which has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein set forth.

Figure 1 represents a perspective of my complete portable water heater. Fig. 2 represents the interior thereof, showing the arrangement of heater sections. Fig. 3 represents a detail of one of the heater sections. Fig. 4 represents the base section of my heater.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—1 designates my new and novel water heater, which comprises an upper casing 2 adapted to interfit with a lower base shell 3, the two parts being detachably secured together by suitable locking means. In the present instance the casing 2 is provided with a number of outwardly projecting spring clips 4 which serve to engage with struck up portions 5 of the lower shell 3. Thus it will be seen that as the casing 2 is lowered into place on the shell 3 that the spring clips 4 will snap outwardly into the struck up portions 5 and securely lock the two sections together.

In order to release the lock to separate the upper casing from the lower member, I preferably provide a bar 6 having fingers 7 secured thereto and normally located at a point adjacent the struck up portions 5 so that when the two sections of the heater are locked together and it is desired to release the catch 4, the same may be accomplished by raising the fingers 7 into engagement with the spring clips 4, whereupon owing to the inclined ends 8 of the fingers 7 they will be withdrawn from engagement with the shell 3 and the two parts released from locking engagement. The fingers 7 are preferably operated by a foot lever 9, suitably pivoted to the base shell 3, the treadle 10 thereof projecting through a suitable opening 11 so that it may be engaged exterior of the casing to operate the release mechanism.

At suitable intervals in the shell 3, recesses 12 are provided to form a supporting means for lugs 13, and a pipe 14 secured to a burner 15. The pipe 14 serves to admit gas to the burner which is of ordinary construction and the flow may be regulated as desired by a valve 16 of any well known form. 17 designates recesses similar to the slots 12 and adapted to receive water inlet and outlet pipes 18 and 19, respectively, the operation of which will be presently described.

The casing 2 is provided on the interior thereof with a suitable shelf 20 adapted to support a water heater to be now described.

This heater consists of a plurality of hollow disks 21 having an aperture 22 through each forming a central opening for the passage of heat from the burner and is also provided with a plurality of openings 23 which serve as an auxiliary escape for the heat so as to more thoroughly heat the water within the disks 21. Between each pair of disks is a pipe 24. These pipes 24 are preferably located relative to one another in staggered relation, thus allowing the water circulating within the disks to pass diametrically from
one side of the disk to the other. The products of combustion pass upwardly through the casing 2 and have ready escape to the atmosphere through suitable apertures 24. Of course it will be understood that suitable brace members 25 are provided as necessary to prevent relative sagging of the disks. The inlet pipe 18 is secured to the lowermost disk 21 and communicates with the interior thereof at a point directly opposite the outlet pipe 24. The outlet water pipe 19 passes through the recesses 17 in close proximity to the burner 15 and then is turned to pass upwardly through the aligned openings 22 to the uppermost disk 21, with the interior of which it communicates.

26 designates a suitable blow off in the pipe 18 whereby any mud, sediment or the like may be drawn off as occasion demands.

It will be apparent that through my novel arrangement of disks I have provided a very large heating surface and one in which the water will be very quickly heated, owing to the extreme thinness of the space within the disk 21.

The pipes 18 and 19 are suitably attached to the casing 2 by the bracket 27 and are thereby held at a sufficient height to definitely position them relative to the ordinary spigots of a bath tub or other basin to which they are attached, whereby the inlet pipe may be connected by the usual flexible tube 28 to the supply of water.

A suitable removable cover 29 is provided to prevent undue loss of heat and a handle 30 is secured at a desired point in order to carry the heater from one point to another and also to allow removal of the top section.

In operation the burner is lighted and water is supplied through the pipe 18 to the lower disk 21, through which it passes, spreading over a large area and forming a thin layer passing directly above the flame from the burner and discharging through the outlet pipe 24. From this pipe 24 it enters the next disk where a similar spreading effect takes place and it thus passes upwardly through the different sections from side to side until it reaches the uppermost one, from which it is delivered to the pipe 19 and passes downwardly directly through the annular space 22 to the outlet, at which point it is at a temperature approximating the boiling point.

It will be apparent that I have devised a heater which is of such light and simple construction that it may be carried from one place to another with extreme ease and readily attached to any source of water supply.

It will further be apparent that the arrangement of the several sections is such as to produce practically an instantaneous heating of the water, thereby insuring a ready supply of hot water at any and all times, as desired. By reason of the thin hollow disk structure and the zig-zag course through which the water is compelled to pass, it will be seen that the heated products of combustion practically come into close proximity with each particle of water and there is comparatively small number of heat units lost.

In so far as I am aware I believe that I am the first in the art to device the combination of a plurality of water sections with a burner and casing structure, whereby a simple, light and efficient portable construction is formed that can be readily transported and instantly connected at any desired point for obtaining a supply of hot water. Furthermore it will be seen that I have devised great advantages by my arrangement of an upper casing enclosing the water heater sections, all of which are integrally removable so that a lower burner section may be separately utilized.

It will now be apparent that I have devised a novel and useful construction which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description and while I have in the present instance shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a device of the character described, a base, a casing removably secured thereto, a sectional water heater supported by said casing, a burner in said base, means to lock said casing and base together, and means to release said locking means.

2. In a device of the character described, a base, a casing removably secured thereto, a sectional water heater supported by said casing, a burner in said base, a clip for locking said casing and base together, and means to release said clip.

3. In a device of the character described, a base, a casing removably secured thereto, a sectional water heater supported by said casing, a burner in said base, a plurality of clips for locking said casing and base together, a finger adjacent each clip, and means to operate said fingers to release said clips.

4. In a portable water heater, a base having a burner therein, a casing removably secured thereto, a plurality of hollow disks in said casing, means secured to said casing for supporting said disks, a water supply pipe communicating with one of said disks, pipes forming water passages from one disk to another, said disks having a water outlet.
and means to permit simultaneous removal of said casing and disks from said base.

5. In a portable water heater, a base having a burner therein, a casing removably secured thereto, a plurality of hollow disks in said casing, a shelf secured to said casing for supporting said disks, a water supply pipe communicating with one of said disks, pipes forming water passages from one disk to another, said disks having a water outlet and means to permit simultaneous removal of said casing and disks from said base.

JOHN L. LEVERING.

Witnesses:

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