

FORM 1

COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952

598177

APPLICATION FOR A STANDARD PATENT

I\We,

STATE INDUSTRIES, INC.,

of

ASHLAND CITY
TENNESSEE 37015
UNITED STATES OF AMERICA

hereby apply for the grant of a standard patent for an invention entitled:

WATER HEATER TANK CONSTRUCTION

which is described in the accompanying complete specification

Details of basic application(s):

Number of basic application	Name of Convention country in which basic application was filed	Date of basic application
095434	US	11 SEP 87

My/our address for service is care of GRIFFITH HACK & CO., Patent Attorneys, 601 St. Kilda Road, Melbourne 3004, Victoria, Australia.

DATED this 09th day of September

1988

STATE INDUSTRIES, INC.,

GRIFFITH HACK & CO.

TO: The Commissioner of Patents.

APPLICATION ACCEPTED AND AMENDMENTS
11.4.90

Forms 7 and 8

AUSTRALIAPatents Act 1952**DECLARATION IN SUPPORT OF A CONVENTION OR NON-CONVENTION
APPLICATION FOR A PATENT OR PATENT OF ADDITION**

No. 22079/88

Name(s) of
Applicant(s)In support of the application/made by STATE INDUSTRIES, INC.

Title

for a patent for an invention entitled WATER HEATER TANK CONSTRUCTIONName(s) and
address(es)
of person(s)
making
declaration

I/We, Ernest Wenczl, Vice President
State Industries, Inc.
Bypass Road
Ashland City, Tennessee 37015 USA

do solemnly and sincerely declare as follows:—

1. I am/we are the applicant(s) for the patent, or authorised by the abovementioned applicant to make this declaration on its behalf.
2. The basic application(s) as defined by Section 141 of the Act was/were made in the following country or countries on the following date(s) by the following applicant(s) namely:—

Country, filing
date and name
of Applicant
for the or
each basic
application

in United States of America on 11th September 19 87
 by Otto Z. Vago
 in _____ on _____ 19 _____
 by _____

3. The said basic application(s) was/were the first application(s) made in a Convention country in respect of the invention the subject of the application.
4. The actual inventor(s) of the said invention is/are

Name(s) and
address(es)
of the or each
actual inventor

Otto Z. Vago
Route 1, Box 443
Burns, Tennessee 37029

5. The facts upon which the applicant(s) is/are entitled to make this application are as follows:—

The said applicant is the assignee of the said
inventor

See reverse
side of this
form for
guidance in
completing
this part

DECLARED at Ashland City, TN this 3 day of OCTOBER 19 88
U.S.A.

Ernest WenczlVice President State Industries, Inc

(12) PATENT ABRIDGMENT (11) Document No. AU-B-22079/88
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 598177

(Modified Examination)

(54) Title
WATER HEATER TANK CONSTRUCTION

International Patent Classification(s)
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095434 11.09.87 US UNITED STATES OF AMERICA

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(71) Applicant(s)
STATE INDUSTRIES, INC.

(72) Inventor(s)
OTTO Z. VAGO

(74) Attorney or Agent
GRIFFITH HACK & CO, MELBOURNE

(57) Claim

1. A water heater tank construction comprised of a tank shell having a tank top member and a tank bottom member mounted therein to provide a water tight space therein, a cold water outlet mounted in lower portion of said tank shell, said tank top member having an upwardly extending flange welded to said tank shell, said flange having a deformed portion extending inwardly from the main body of the flange to provide a space between said shell and said deformed portion, and a hot water outlet mounted in the upper portion of said tank shell with at least a portion of said outlet extending into said space provided by said deformed portion of said flange.

2. A water heater according to claim 1 in which the axis of said hot water outlet is at approximately the same level as the face of said tank top member.

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Form 10

COMPLETE SPECIFICATION

(ORIGINAL)

FOR OFFICE USE

Short Title:

Int. Cl:

Application Number:
Lodged:

Complete Specification-Lodged:
Accepted:
Lapsed:
Published:

This document contains the
amendments made under
Section 49 and is correct for
printing.

Priority:

Related Art:

TO BE COMPLETED BY APPLICANT

Name of Applicant:

STATE INDUSTRIES, INC.,

Address of Applicant: ASHLAND CITY
TENNESSEE 37015
UNITED STATES OF AMERICA

Actual Inventor:

Address for Service: GRIFFITH HACK & CO.,
601 St. Kilda Road,
Melbourne, Victoria 3004,
Australia.

Complete Specification for the invention entitled:
WATER HEATER TANK CONSTRUCTION

The following statement is a full description of this invention
including the best method of performing it known to me:-

1A

WATER HEATER TANK CONSTRUCTION

BACKGROUND OF THE INVENTION

Field of the Invention

5 This invention relates to water heaters and more specifically to a water heater tank construction having a unique hot water outlet design.

Description of the Prior Art

10 In a water heater tank of conventional design the hot water outlet is located in the top portion in the tank as shown in dotted lines in FIG. 1. With such design the water level of the tank provides a relatively large air space above such level in which the exposed portions of the tank interior are subject to corrosion. The design of the present invention
15 contemplates the location of the hot water outlet at a distinctly higher level in the tank to thereby reduce the amount of exposed portions of the tank in the space above the water level.

SUMMARY OF THE INVENTION

20 A water heater tank including a shell having a tank top member and tank bottom member welded therein. A cold water outlet is mounted in the lower portion of the shell. The tank top member has an upwardly extending flange welded to the tank shell.
25 The flange has a deformed portion extending inwardly

from the main body of the flange to provide a space between the shell and the deformed portion. A hot water outlet is mounted in the upper portion of the tank with at least a portion of the outlet extending into the space provided by the deformed portion of the flange to thereby provide a water level in the tank which is substantially higher than that of the conventional design.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a fragmentary cross sectional elevational view of the water heater equipped with an improved hot water outlet construction;

FIG. 2 is a fragmentary top plan view of the tank top member of the water heater shown in FIG. 1; and

FIG. 3 is a fragmentary side elevation view taken along line 3--3 of FIG. 2.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. 1, the water heater is comprised of a tank shell 10 having a top tank member 12 and a bottom tank member 14 mounted therein. Top and bottom members 12 and 14 are fastened to shell 10 by welds 18 and 22 to provide a water tight space in the tank. Top member 12 has an upwardly extending flange 16 fastened to shell 10 by a weld 18. Tank bottom member 14 has a downwardly extending flange 20 fastened to shell 10 by a weld 22.

A plurality of flue tubes 24 (one shown) are mounted in tank top and bottom members 12 and 14 by means of collar members 26 and welds 28 and 30.

A jacket member 32 is mounted around tank 10 and has a jacket top member 34 and a jacket bottom member 36.

Jacket bottom member is provided with a plurality of legs 38 and the space 40 directly below

tank bottom 14 serves as a combustion chamber in which a burner (not shown) is mounted.

Cold water is introduced into the bottom portion of the tank through nipple 42 threaded into a spud 44 of conventional design. Spud 44 is welded to tank shell 10 by weld 46.

In a water heater tank of conventional design the hot water outlet 48 is located in the top portion of the tank as shown in dotted lines in FIG. 1. With such design, the water level in the tank as indicated by reference numeral 50 will provide a relatively large air space above such level in which the exposed portions of the tank interior are subject to corrosion.

The design of the present invention contemplates the location of the hot water outlet at a distinctly higher level in the tank. Such design includes an outlet nipple 52 and spud 54 assembly mounted with the axis 56 of nipple 52 at approximately the same level as the face of tank top member 12. To accommodate such location of the hot water outlet, the flange 16 of the tank member 12 is provided with a deformed portion 58 which extends inwardly from the main body of flange 16 to thereby provide a space 60 between shell 10 and the deformed portion 58 of flange 16. In such improved construction the water level can be maintained at a relatively high level as indicated by reference numeral 62 to thereby materially reduce the air space above level 62 which in turn materially reduces the portions of the tank interior which are exposed to air. Corrosion of the exposed portions of the tank interior is thereby reduced.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A water heater tank construction
comprised of a tank shell having a tank top member and
a tank bottom member mounted therein to provide a water
tight space therein, a cold water outlet mounted in
5 lower portion of said tank shell, said tank top member
having an upwardly extending flange welded to said tank
shell, said flange having a deformed portion extending
inwardly from the main body of the flange to provide a
space between said shell and said deformed portion,
10 and a hot water outlet mounted in the upper portion of
said tank shell with at least a portion of said outlet
extending into said space provided by said deformed
portion of said flange.

2. A water heater according to claim 1 in
which the axis of said hot water outlet is at
approximately the same level as the face of said tank
top member.

DATED THIS 9TH DAY OF SEPTEMBER 1988

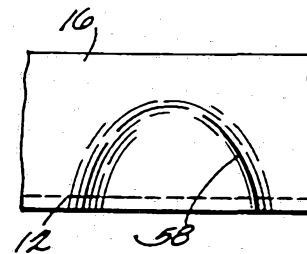
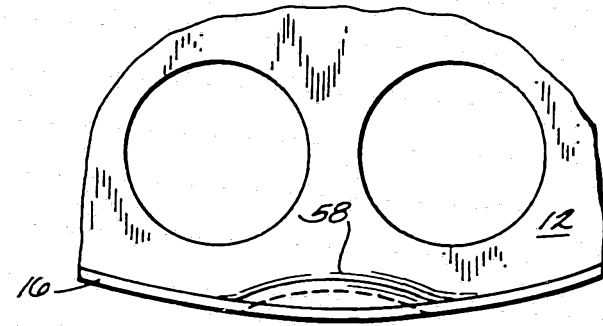
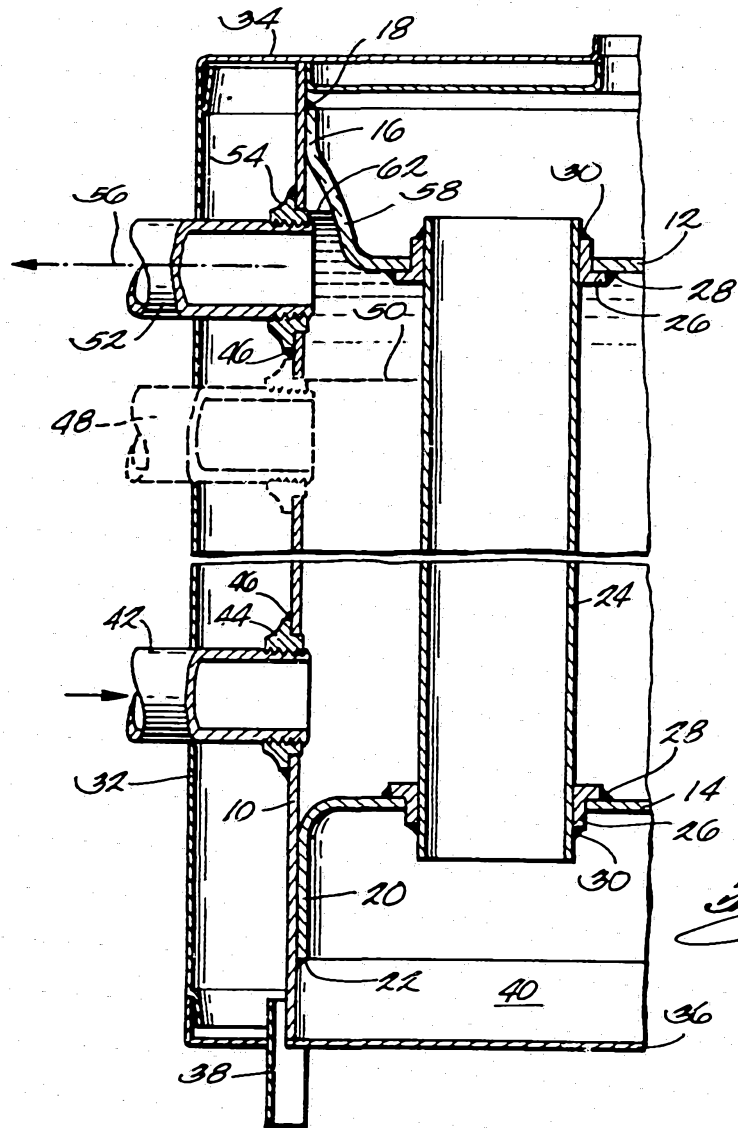
STATE INDUSTRIES, INC.

By its Patent Attorneys:

GRIFFITH HACK & CO.

Fellows Institute of Patent
Attorneys of Australia





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