8104X

T. Spalding,

Steam-Boiler Indicator.

Patented Mar. 22, 1834.

Fig. 3.

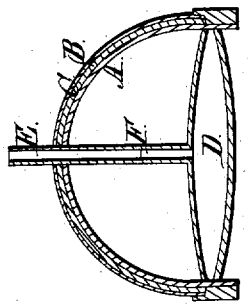


Fig. 5.

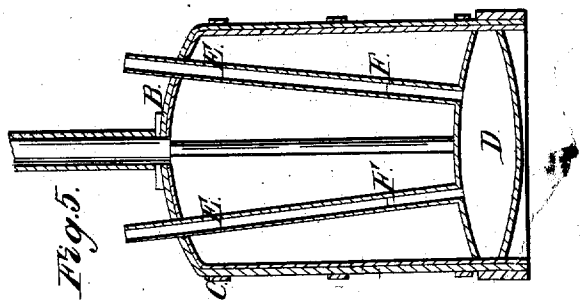


Fig. 4.

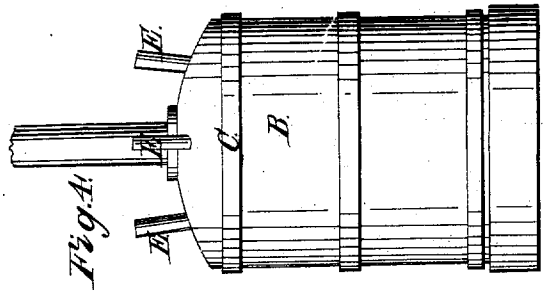


Fig. 2.

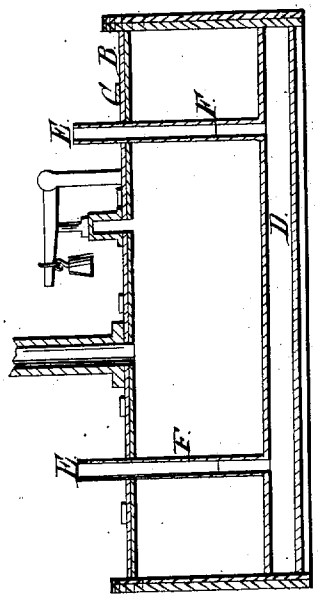
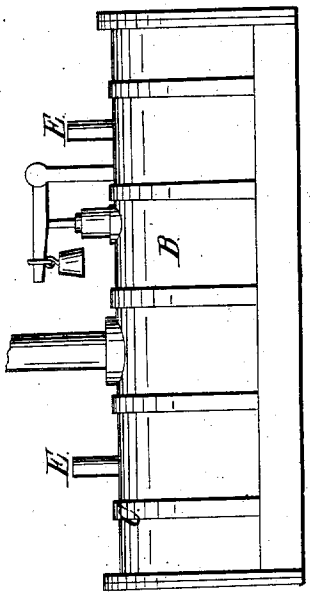


Fig. 1.



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

March, 22 1834 79

Thomas Spalding. McIntosh. Co Georgia 8104X

Letters Patent.

The schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Thomas Spalding himself of his improvement in Generating Steam

To all to whom these presents shall come. Be it known that I Thomas Spalding of the County of McIntosh and State of Georgia have invented a new and useful improvement in generating Steam and the following is a description of the Boiler as invented and improved by me The Boiler either round or long as may be desired or required and in external appearance will resemble any other Boiler now in common use. but the bottom will consist of three plates either cast iron or iron as may be desired kept apart from each other by hoops of the same metal of which the plates of the bottom may be composed and the bottom may be made either of cast or wrought copper or iron as will and around the bottom three duplicate strong iron hoops will pass and be secured to it in the strongest manner by screws equal to any pressure of steam that may be required or desired

The upper parts of the Boiler will be composed first of a casing in the common form of the Boilers of either copper or iron or tinned iron or cast iron or in fine of any metal which will contain water and be water tight at the necessary temperature for generating steam and over this will be laid hempen flax or cloth made of hemp or flax or cotton or wool saturated with paste or glue animal or vegetable as many foldings of the cloth or the materials of which cloth is made as may give perfect security against the possibility of bursting under any pressure that can be properly required in any useful mechanical operation for it was long since proven at Brest in a series of experiments made by men of science under the direction of the government of France that hempen kept together with glue was one third stronger than the wood itself

8104X

non and three as strong as a bar of English iron of the same size
over all these circular ones of a light Metal such of copper or iron as
will for ornament as to keep from injury the outer coating of the boiler
may be placed and which would show to the spectator any extraordi
nary pressure from within. From the upper plate of which the bot
tom of the boiler is formed tubes of the same metal as numerous as
may be deemed communicating with the space left open between the
two plates of which the bottom is composed pass up thro the water and
open into the air above & thro the top of the Boiler. The Boiler is
supplied with water and furnished with safety valves &c all other
appendages necessary either for use or security. The intermediate space
between the two plates of the bottom is filled with tallow or any other
animal or vegetable oil or intermedium that is capable of readily melt-
ing and readily communicating to the water above it separated by the
upper plate and by the pipes from the water contained in the boiler but
imparting to it the high temperature which it is capable of convey-
ing — The tubes which pass from the intermedium thro the upper cov-
ering of the boiler will strengthen and preserve it from collapsing in
any neglect of the engineer. Which the intermedium communicating
with the atmosphere if the water in the boiler should be from careless-
ness allowed altogether to evaporate would then but not until then
throw off its vapour and show by that its absence & that there was no water remaining in the boiler to take off the redundant
heat contained in the intermedium. Tallow and other animal or
vegetable oils have been preferred because in giving out their vapour
in the absence of all water in the boiler where they would give an
admonition sound sufficient to alarm any passenger in a steam
Boat or other machine connected with it — It will be seen that
by this arrangement of tubes filled with tallow or other intermedium
all the powers of Stephenson Jabelon Boiler will be obtained without
their being subject to being destroyed by the passage of the flame thro
them — Witness

Wm E Landale } Thomas Spalding
Wm Kemp } (Ga) (L.S.)