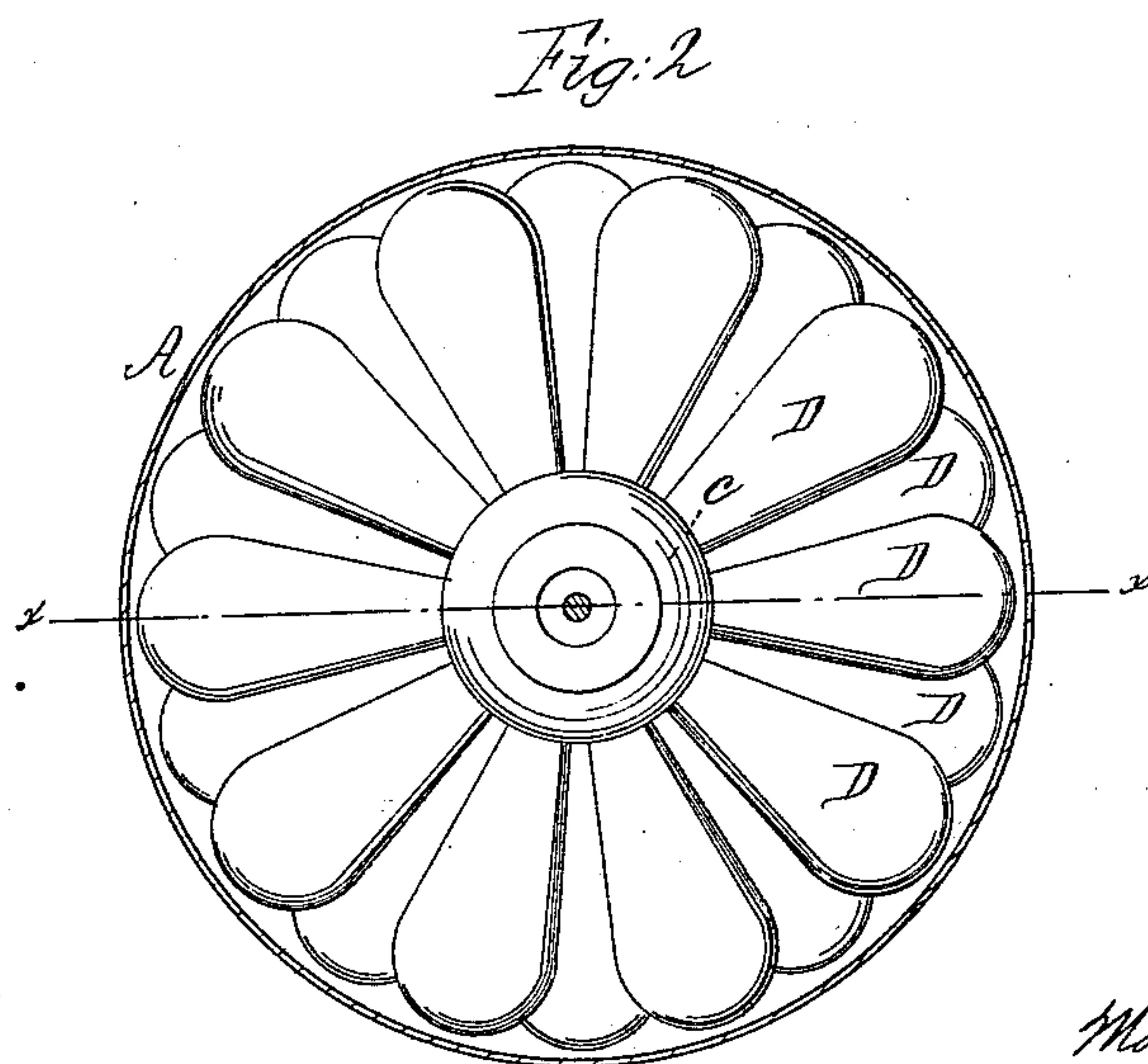
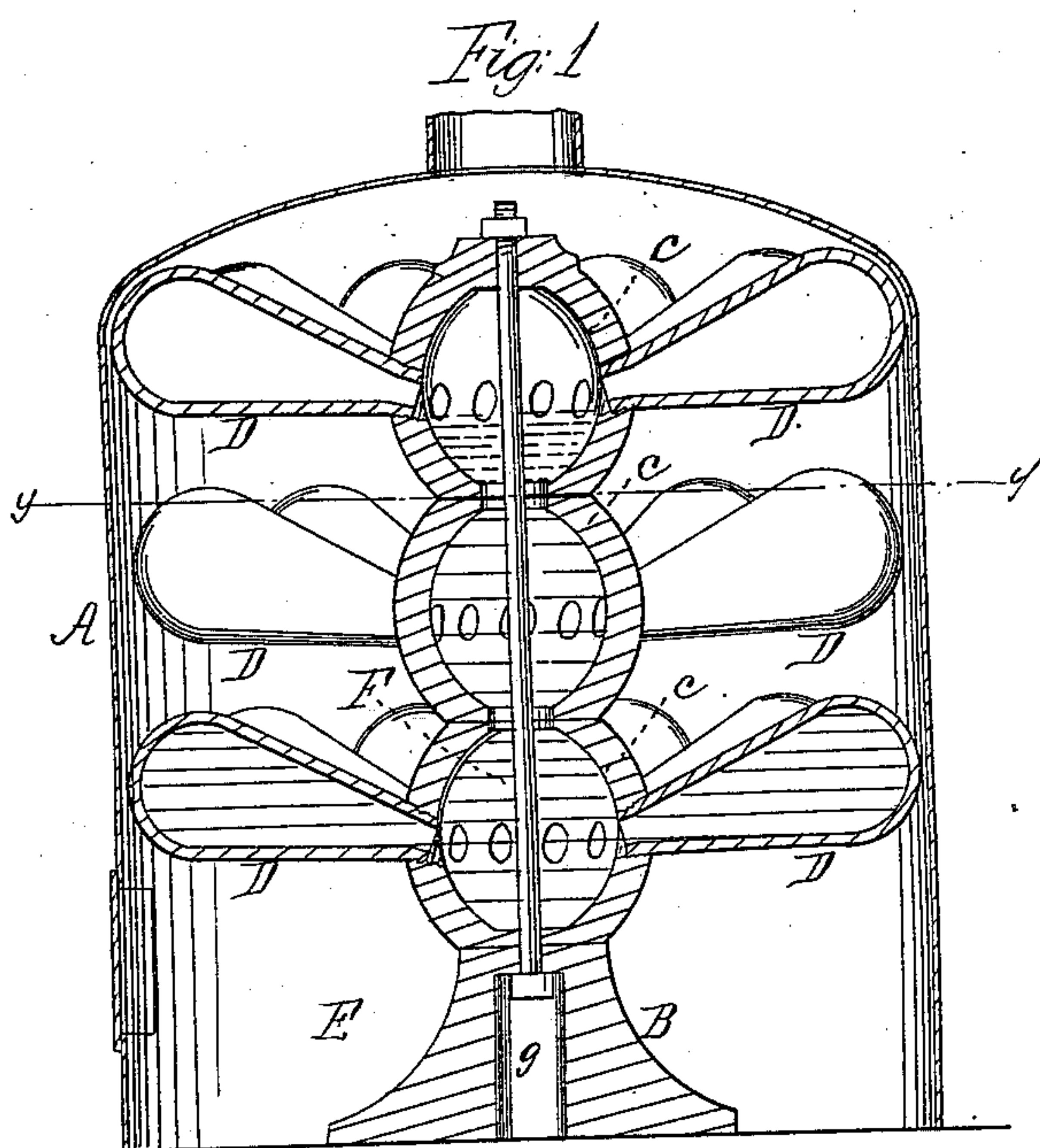


M. Turley,
Sectional Steam Boiler.
No 82,567. Patented Sep. 29, 1868.



Witnesses
Am. A. Morgan
J. C. Cotton.

Inventor:
Marshall Turley
per Munn & Co
Attorneys.

United States Patent Office.

MARSHALL TURLEY, OF COUNCIL BLUFFS, IOWA.

Letters Patent No. 82,567, dated September 29, 1868.

IMPROVEMENT IN STEAM-GENERATORS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, MARSHALL TURLEY, of Council Bluffs, in the county of Pottawatomie, and State of Iowa, have invented a new and useful Improvement in Steam-Boilers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to improvements in boilers for generating steam, whereby the greatest amount of steam-generating or fire-surface is obtained, and danger from bursting or over-pressure is avoided; and it consists in the arrangement of parts, as will be hereinafter more fully described.

Figure 1 represents a sectional elevation of a boiler constructed according to my invention, the section being through the line *x x* of fig. 2.

Figure 2 is a horizontal section of fig. 1, through the line *y y*.

Similar letters of reference indicate corresponding parts.

A represents the outer casing, which surrounds the boiler, which may be made of sheet iron, or brick, or other material.

B represents the stand or pedestal.

C represents globular-shaped sections, more or less in number, which stand on top of each other, forming steam-tight joints between, as seen in the drawing.

D represents the hollow arms, being pear-shaped separate vessels, which are screwed into the sections C.

These vessels stand in an inclined position, so that any sediment or scale contained therein may be readily blown out whenever it is necessary to clean the boiler.

E is the fire-box.

The sections C are confined together by a single central bolt, F, which passes upward from the cavity *g*, in the base or pedestal B, through all the sections, with a nut on its end bearing upon the upper section, as seen in the drawing.

The ends of these sections, where they come in contact, are turned off true, so that a tight joint is formed, or packing may be used, if necessary, in forming the joint.

Each section has any required number of the arms D radiating from it, and they are so arranged that the arms of the sections above, stand over the spaces between the sections below them, so that the heated products of combustion are deflected, and retarded in their ascent, and made to lap round the arms, thus compelling the heated gases to part with their caloric.

It will thus be seen that the sections and arms form steam-generating surface.

The number of sections, as well as their size, will depend upon the amount of steam required, but the number can be increased or diminished, by altering the length of the central bolt F.

By this construction of a steam-generator, the danger from explosion is avoided, as a single arm may explode without any serious consequences, but the metal in this form will withstand much more pressure than is required of ordinary boilers under any circumstances.

In this example of my invention, I have not deemed it important to show the boiler-connection, as when in working-order, my object being to illustrate my idea of a sectional boiler, one that may be readily transported, and put together in locations and situations which would preclude the use of the ordinary steam-boiler.

The facility with which the boiler may be increased in size and power, in case of necessity, and repaired, in case of failure of any particular part, is a consideration of the highest importance.

I claim as new, and desire to secure by Letters Patent—

The arrangement of the separate globular sections C, with the hollow upward inclined screw-arms D, as herein shown and described.

MARSHALL TURLEY.

Witnesses:

Dr. J. K. MORSE,

Dr. F. C. CLARK.