

1,039,256.

H. CLIFTON.
STEAM GENERATOR.
APPLICATION FILED DEC. 28, 1908.

Patented Sept. 24, 1912.

2 SHEETS—SHEET 1.

FIG. 1

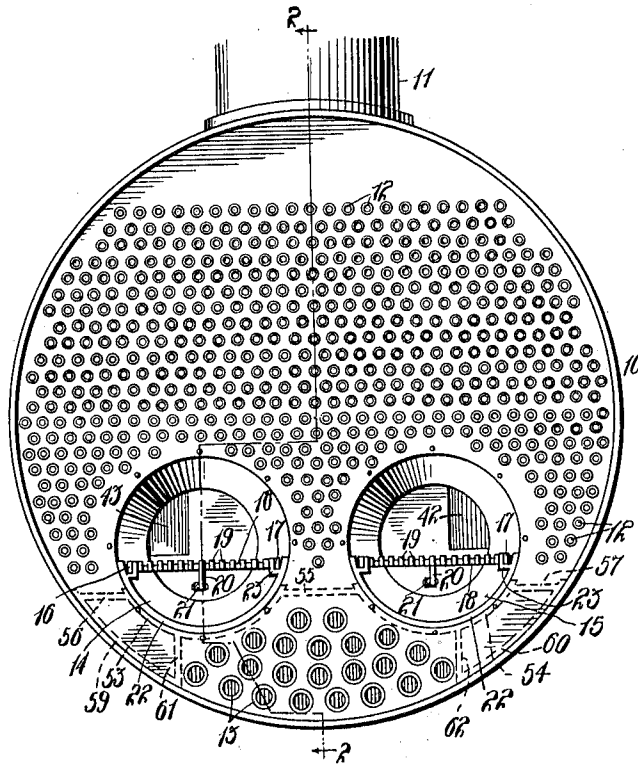
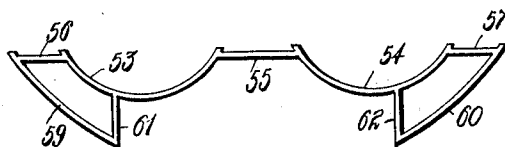


FIG. 3



Witnesses
W. C. Fielding
E. J. Hurst

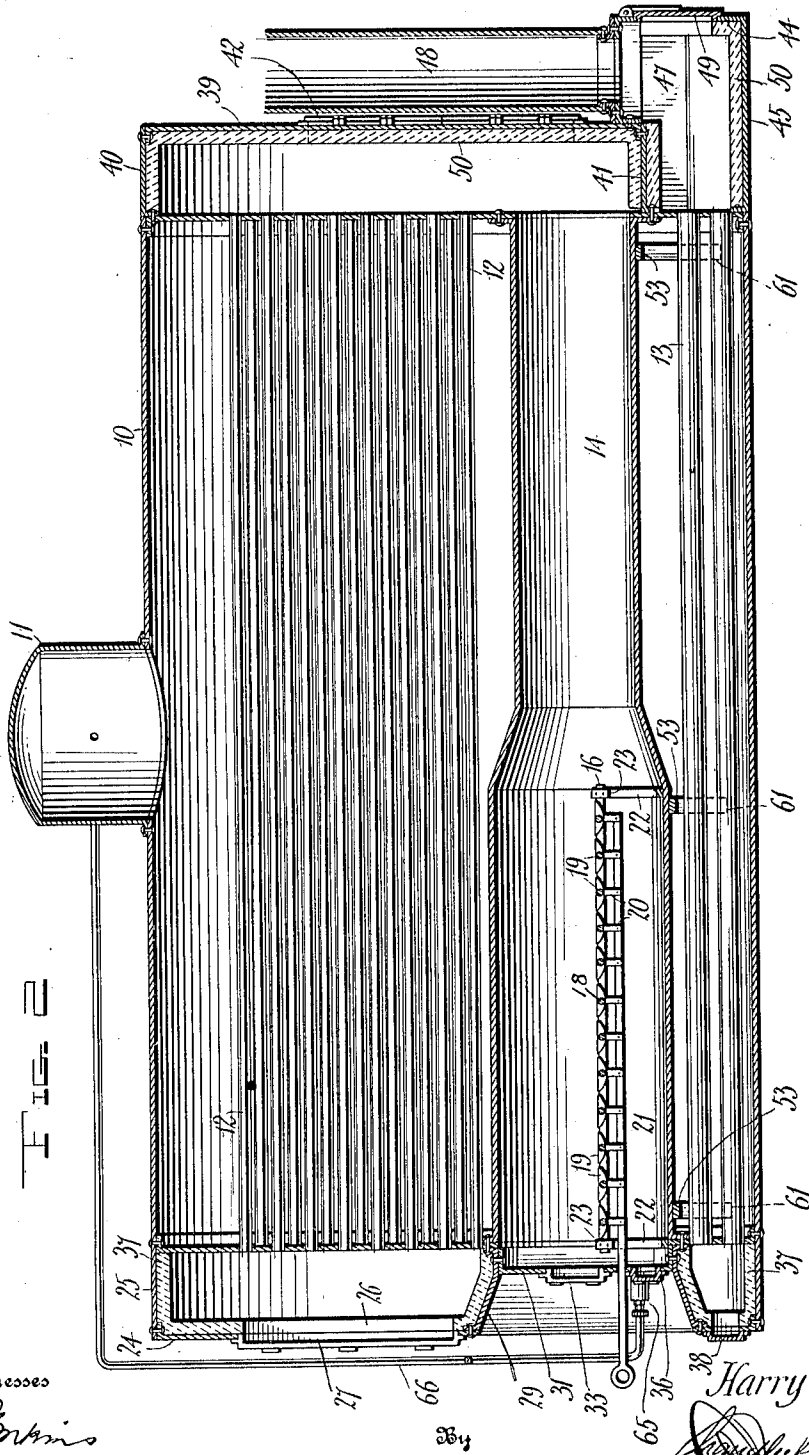
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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

HARRY CLIFTON, OF CANAL DOVER, OHIO.

STEAM-GENERATOR.

1,039,256.

Specification of Letters Patent.

Patented Sept. 24, 1912.

Application filed December 28, 1908. Serial No. 469,633.

To all whom it may concern:

Be it known that I, HARRY CLIFTON, a citizen of the United States, residing at Canal Dover, in the county of Tuscarawas, State of Ohio, have invented certain new and useful Improvements in Steam-Generators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to steam generators, and has for one of its objects to improve the construction and increase the efficiency and utility of devices of this character.

Another object of the invention is to provide an improved form of support for the combustion tube for internally fired steam boilers.

The invention consists in certain novel features of construction as hereafter shown and described and then specifically pointed out in the claim, and in the drawings illustrative of the preferred embodiment of the invention, Figure 1 is a front view of the shell with the front extension detached. Fig. 2 is a section on the line 4—4 of Fig. 3. Fig. 3 is a view of one of the supports for the combustion tubes, detached.

For the sake of clearness the improved device is illustrated and described as applied to an internally fired boiler comprising a circular shell 10, preferably having a steam dome 11. The shell 10 is provided with two sets of flues, an upper set represented at 12 and a lower set represented at 13, the upper flues being preferably smaller than the lower flues, and arranged with two blank portions between the two sets of flues. Arranged within the blank portions between the sets of flues are two combustion tubes 14—15, the latter opening at their ends through the flue sheets at the ends of the shell, the combustion tubes being largest at the grate ends, as shown.

It will thus be seen that I have provided an improved form of boiler support for the combustion tubes of internally fired boilers.

Located beneath the combustion tubes 14—15 at suitable intervals are transverse frames, as many of these frames being employed as required, depending upon the

length of the shell, but for the purpose of illustration three of the frames are shown, one centrally of the combustion tubes, and one at each end thereof. These supporting frames comprise curved portions 53—54 conforming to and bearing beneath the combustion tubes 14—15, and connected centrally by a horizontal portion 55 and with horizontal portions 56—57, the outer ends of the latter portions extending to the inner face of the shell 10. Bearing downwardly and inwardly from the outer ends of the extensions 56—57 are curved bracket like portions 59—60, and leading upwardly from the inner ends of the latter portions are vertical portions 61—62 terminating at their upper ends beneath the curved portions 53—54. These supporting frames will preferably be constructed by forging or welding, so that they will form rigid firm supports to the combustion tubes. The central supporting frame and forward supporting frame will be constructed with the portions 53—54 to conform to the larger portions of the combustion tubes, while the corresponding portions of the rear supporting frame will conform to the smaller portion of the same, as will be obvious.

What is claimed, is:—

An internally fired boiler, comprising a shell, a pair of parallel furnace flues leading into a rear combustion chamber, and means for supporting said flues, said means consisting of a plurality of frames each comprising spaced apart curved portions conforming to and bearing beneath the furnace flues and connected centrally by a horizontal portion, said curved portions each terminating in a horizontal extension bearing against the inner face of the shell, downwardly extending vertical portions carried by said curved portion, and curved bracket members connecting said horizontal and vertical extensions and conforming with and adapted to bear against the inner face of the shell.

In testimony whereof, I affix my signature, in presence of two witnesses.

HARRY CLIFTON.

Witnesses:

M. P. CLIFTON,
JOHN A. HOSTETLER.