

(No Model.)

W. A. TRACY.  
SAFETY DEVICE FOR BOILERS.

No. 329,509.

Patented Nov. 3, 1885.

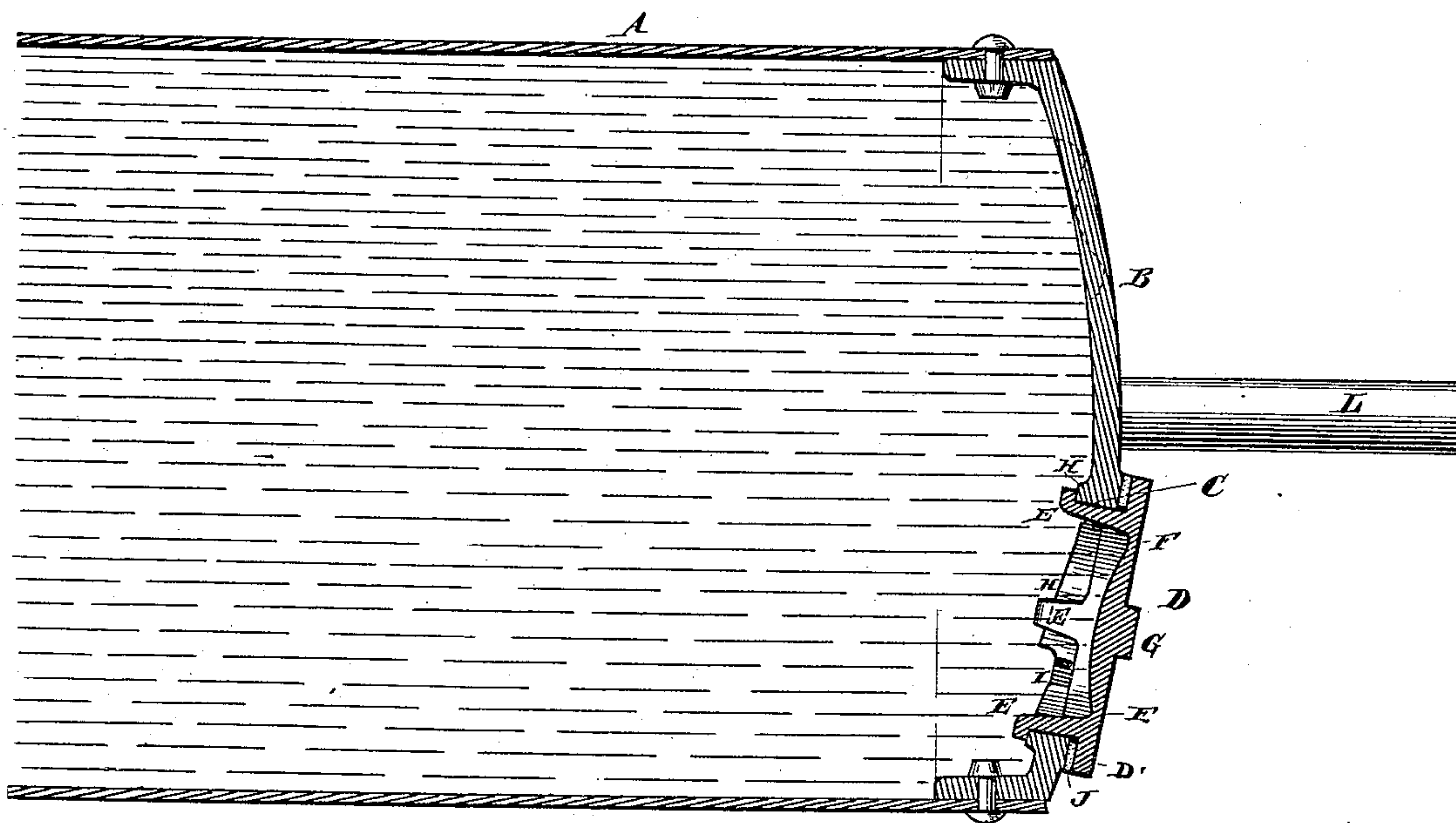


Fig. 1

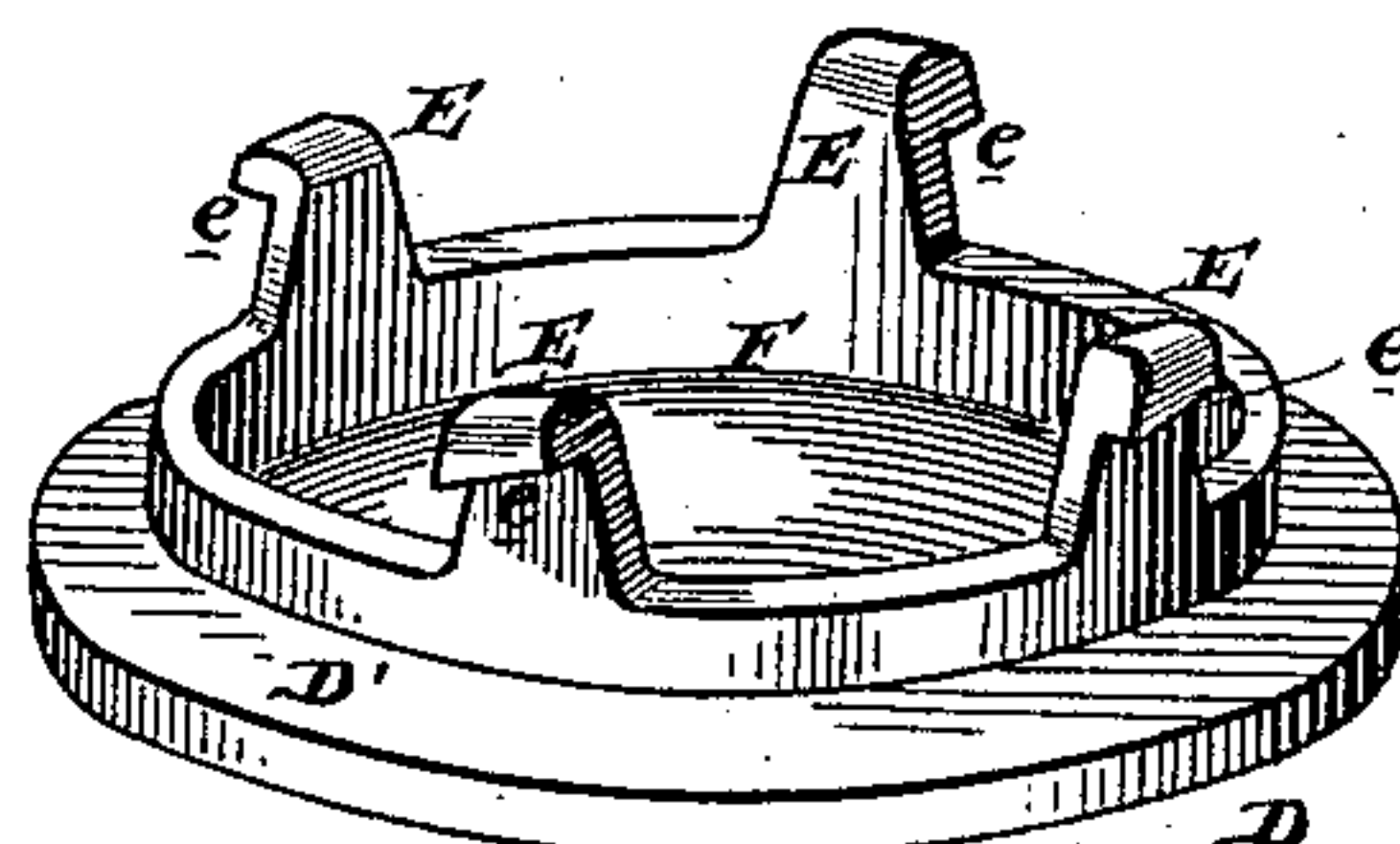
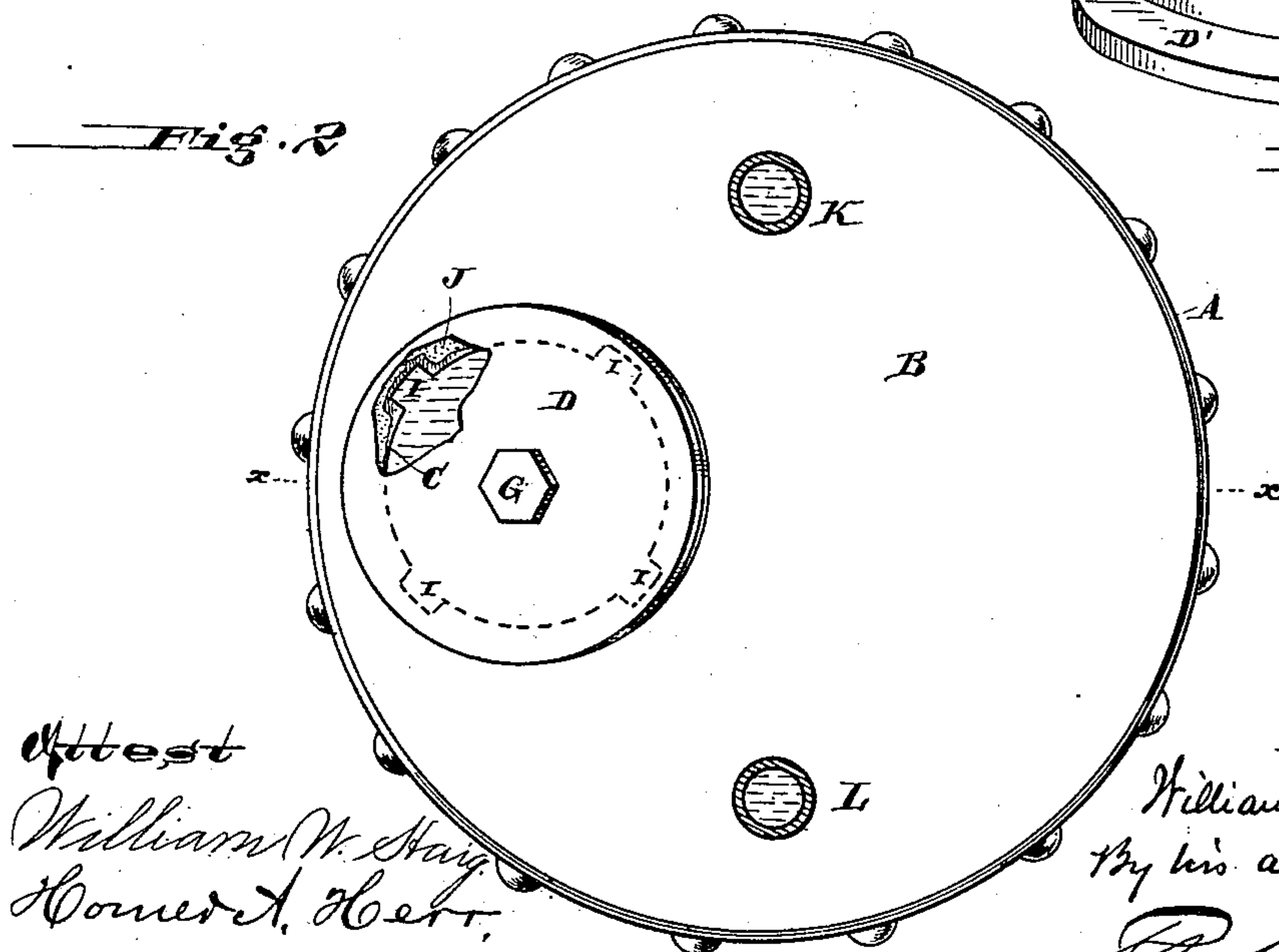


Fig. 3



Attest  
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# UNITED STATES PATENT OFFICE.

WILLIAM A. TRACY, OF PHILADELPHIA, PENNSYLVANIA.

## SAFETY DEVICE FOR BOILERS.

SPECIFICATION forming part of Letters Patent No. 329,509, dated November 3, 1885.

Application filed January 6, 1885. Serial No. 152,122. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. TRACY, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and  
5 useful Improvement in Safety Device for Boilers, of which the following is a specification.

My invention has reference to hot-water boilers for household use; and it consists in certain improvements upon Letters Patent granted to me August 19, 1884, numbered 303,765,  
10 which may be defined as a hot-water boiler provided with a hand or cleaning hole, over which a cap of peculiar construction may be clamped without the use of bolts; further, in  
15 providing said cap or a portion of the boiler with a park, preferably ring-shaped, whose thickness is greatly reduced, whereby, should excessive pressure be generated within the boiler, the said weakened portion may be rup-  
20 tured and blown out without injury to the remaining park or shell of the boiler, and in many details of construction, all of which are fully set forth in the following specification, and shown in the accompanying drawings,  
25 which form part thereof.

In hot-water boilers for household use great danger arises from the fact that no provision is made which shall insure the bursting boiler becoming ruptured at some particular point  
30 where no injury to persons shall result. As heretofore constructed if the boiler burst there was no certainty as to which direction the parts and scalding water would be projected, and aside from the actual danger arising there-  
35 from, great uneasiness and discomfort is felt upon the part of those whose duty calls them in the vicinity of said boiler when the same is sustaining greater pressure than is intended, or when the boiling water causes foam-  
40 ing and unpleasant noises. The object of my invention is therefore to provide one of the cast-iron heads with a portion which shall be sufficiently weak that should the boiler, from any cause, have to sustain a greater pressure  
45 than intended the said portion will be blown out without injury to the remaining parts of the boiler, and this weakened portion is preferably formed in a removable cap or plate which covers a hand-hole, through which the  
50 boiler may be cleaned when desired, and when said cap with its weakened portion becomes

broken a new cap can be readily attached, and the boiler as an entirety be quickly put in working condition again. This cap or plate may be located wherever desired, but prefer-  
55 ably upon one of the boiler-heads, and its position may be such that when projected by the force of the steam or freezing water, as the case may be, it shall pass in a direction not liable to injure any one in the room. 60

By making the hand-hole cap easily removable the same can be detached when occupants of the house close the same for a long period of time, and thereby allow a thorough ventila-  
65 tion of the said boiler and its connecting-pipe, thus insuring pure water when the apparatus is once more put in operation.

The simplicity of construction and the ease with which the cap may be connected or dis-  
70 connected to the head of the boiler allows the same to be removed or attached without the necessity of obtaining the services of a plumber.

In the drawings, Figure 1 is a sectional plan view on line *xx*, of one end of a hot-water boiler  
75 embodying my improvements, and Fig. 2 is an end view of same with a portion of the cap broken away, and Fig. 3 is an inverted perspective view of the cap or cover of the hand-hole. 80

A represents the boiler shell, and B one of its heads, which is commonly made of cast-iron.

K and L are its discharge and supply pipes. The head B is provided with an aperture or  
85 hand-hole, C, made smooth upon its outer surface, notched in two or more places, as at I, and provided with inclined or cam faces H upon the inside, which start from said notches.

D is a cap or cover, and is provided with the flange D' and the weakened part F, which is  
90 preferably made circular, as shown. Projecting from the inner side of said plate are clamping portions E corresponding in number and location to the notches I in the hand-hole, and the binding faces *e* of said portions E are pre-  
95 ferably inclined, as shown in Fig. 3, to correspond in the inclination to the cam-face H. In attaching this cap the portions E are passed through notches I, and the plate is thus turned by applying a wrench to the nut G upon the  
100 outer face of the said cap, and upon turning the said plate the faces *e* of the parts E run

upon cam-faces H and draw the flange C of said hand-hole cap tightly down upon the packing J, forming a water-tight joint between the said cap and the boiler-head. If the steam or freezing water should produce such a pressure as to break the said cap at weakened portion F, the discharge of the water would take place through the aperture so made without otherwise injuring the boiler. This weakened part F might be made in the head B itself, as indicated in dotted lines in Fig. 1, if so desired, or might be formed in a cap of any other description. Therefore, while I prefer the construction shown, I do not limit myself thereto, as it may be modified in various ways without departing from my invention.

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

1. The boiler A, having head B, provided with hand-hole C, furnished with cam-faces H, in combination with cap D, having nut G, weakened part F, and lugs E, having inclined faces e, substantially as and for the purposes specified.

2. The boiler A, having head B, provided with hand-hole C, furnished with cam-faces H, in combination with cap D, having flange D', weakened part F, and lugs E, having faces e, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

WILLIAM A. TRACY.

Witnesses:

R. M. HUNTER,  
WILLIAM C. MAYNE.