

(No Model.)

W. MOONEY.
BOILER.

No. 490,257.

Patented Jan. 17, 1893.

Fig. 1.

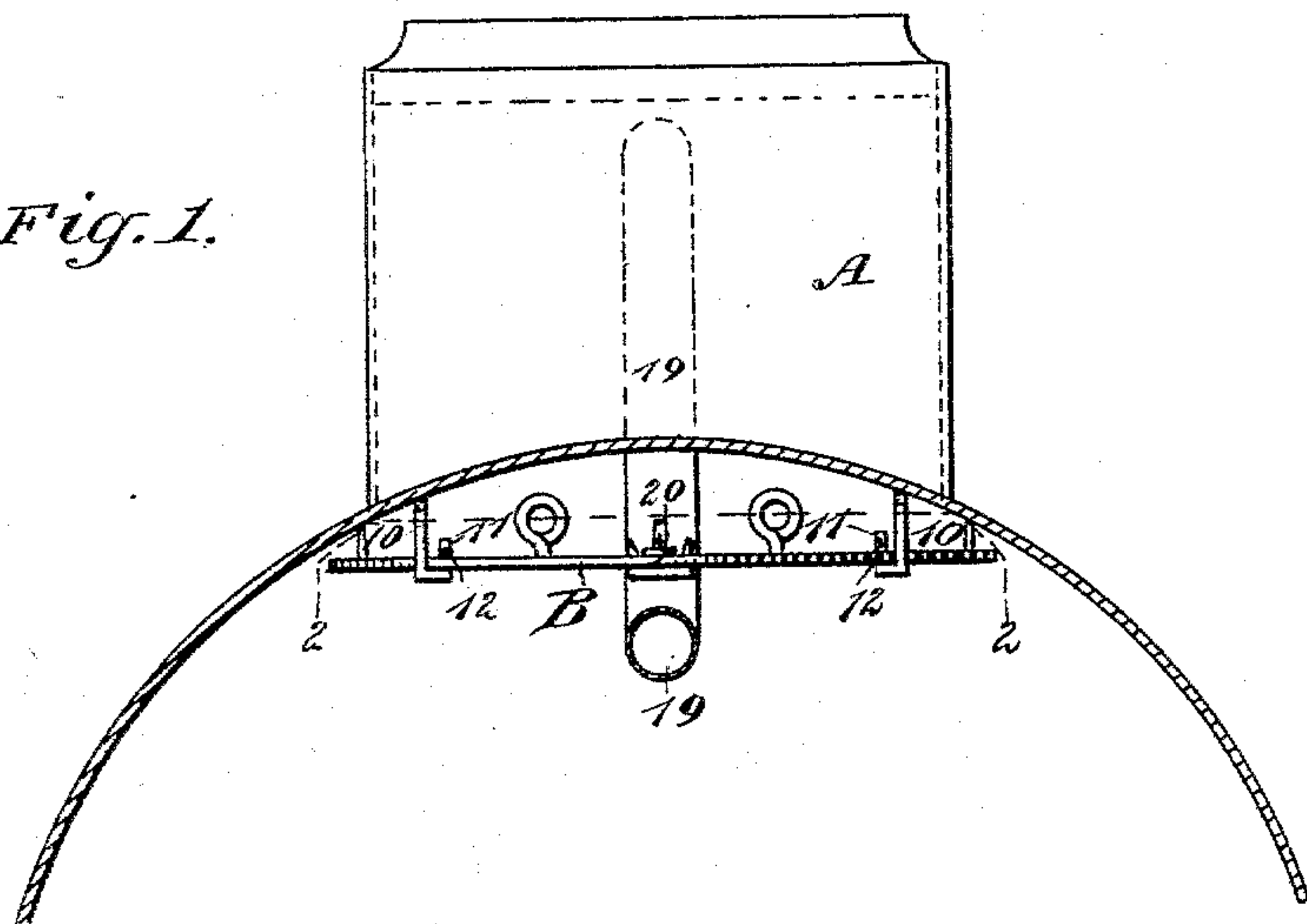


Fig. 2.

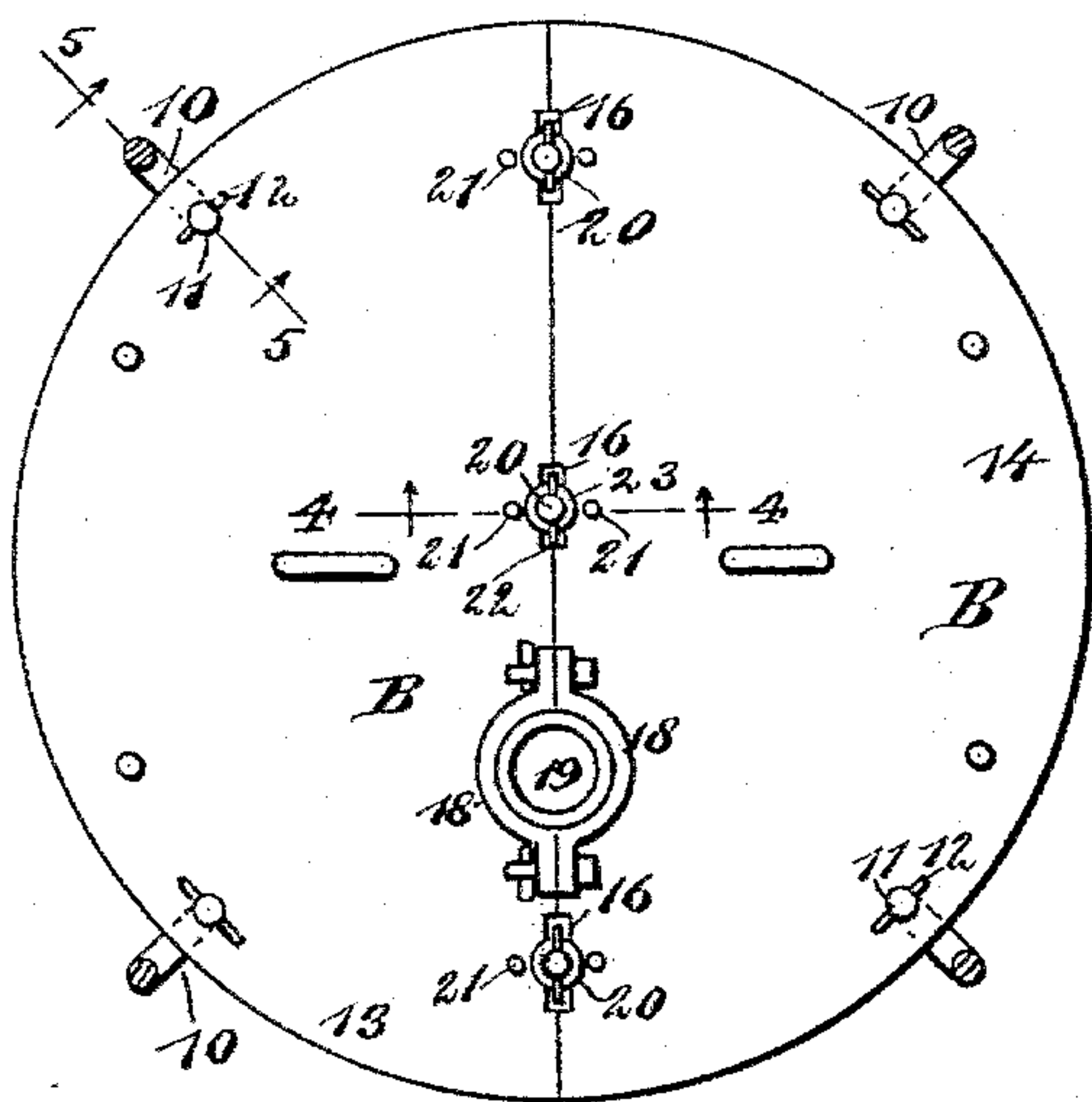


Fig. 3.

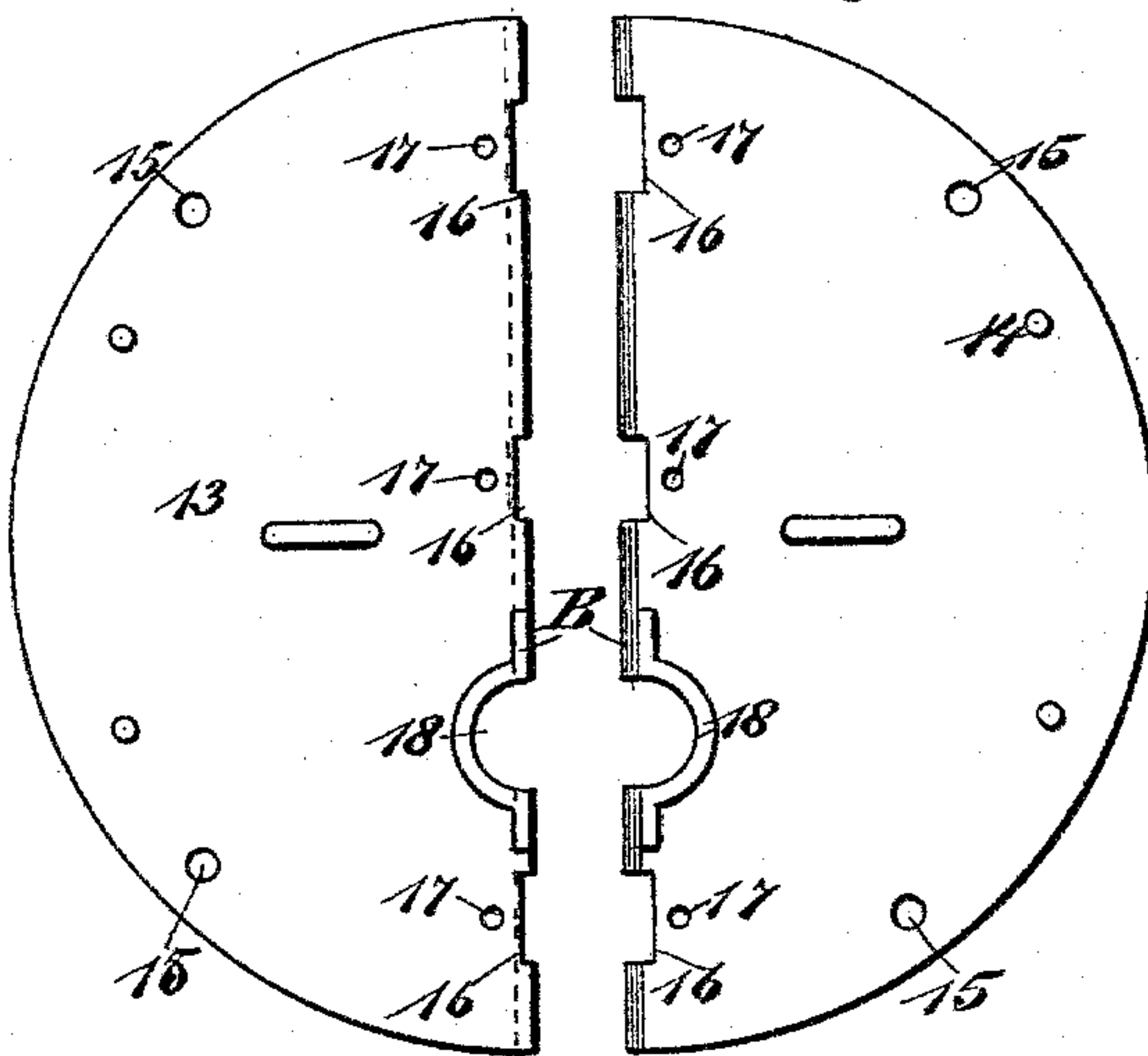


Fig. 5.

WITNESSES:
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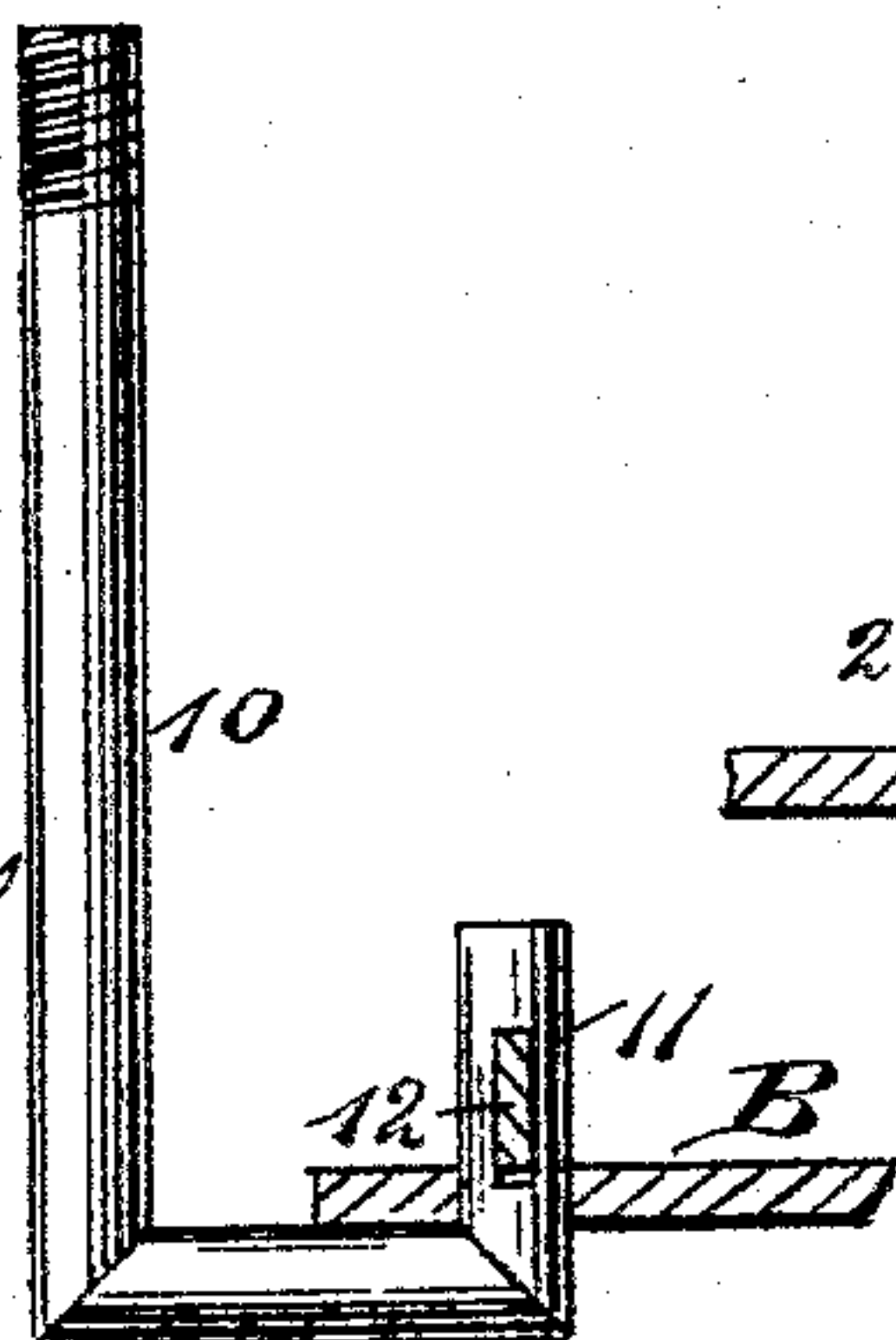
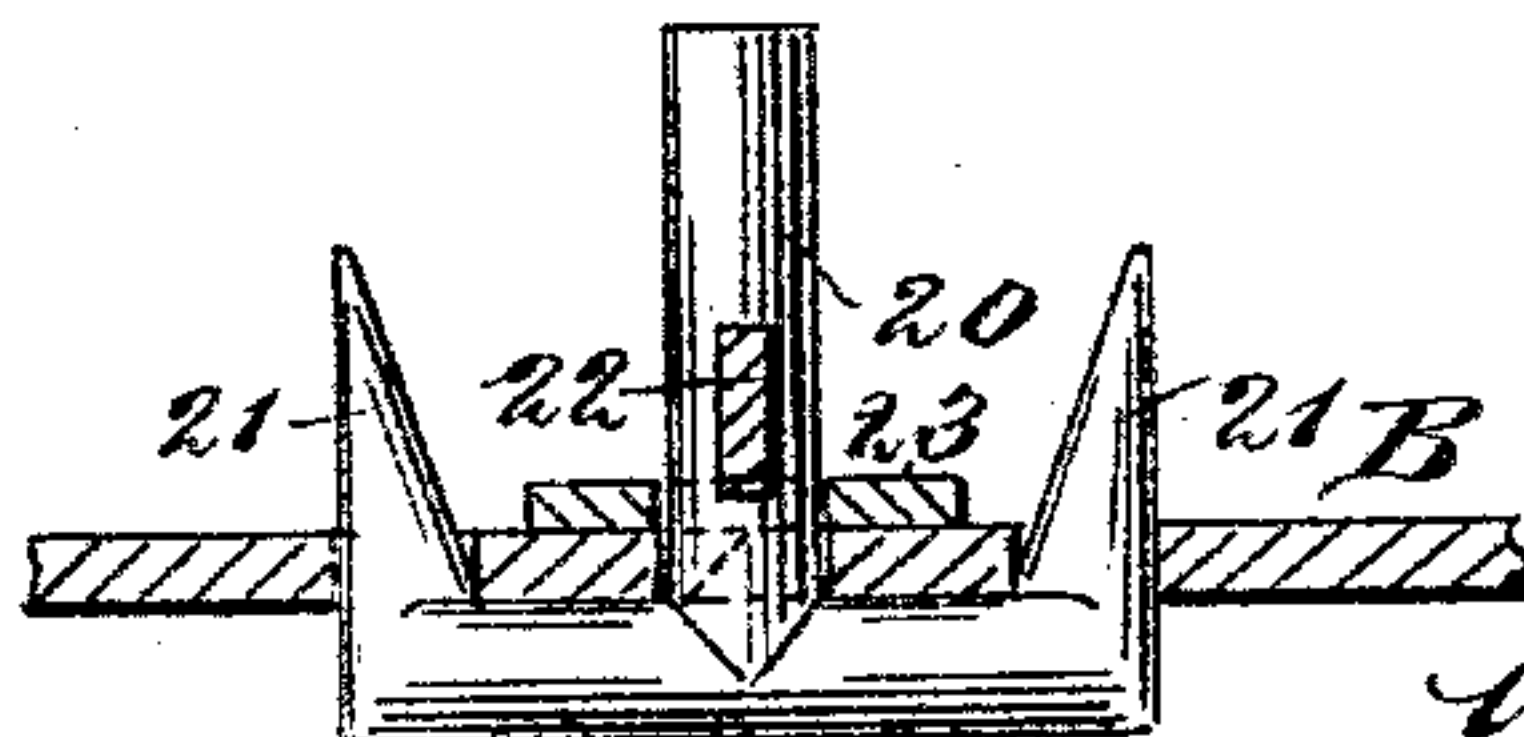


Fig. 4.



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WILLIAM MOONEY, OF ATLANTIC HIGHLANDS, NEW JERSEY.

BOILER.

SPECIFICATION forming part of Letters Patent No. 490,257, dated January 17, 1893.

Application filed March 26, 1892. Serial No. 426,562. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MOONEY, of Atlantic Highlands, in the county of Monmouth and State of New Jersey, have invented a new and useful Improvement in Boilers, of which the following is a full, clear, and exact description.

My invention relates to an improvement in boilers, especially to improvements in locomotive boilers, and has for its object to provide a means whereby the steam taken from the dome of the boiler will be exceedingly dry.

A further object of the invention is to provide a means whereby the water in the boiler cannot by any possibility be drawn up by suction or by other means into the dome to wet the steam therein, but whereby the steam in the main body of the boiler will be compelled to take a circuitous route, which the water cannot follow, in order to enter the dome, thereby enabling the engine to run under full throttle or high pressure, without trouble from surging or working of water in boiler, and hence furnishing increased speed and power, without additional steam area or consumption of fuel.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a vertical section through a boiler having the improvement applied thereto; Fig. 2 is a horizontal section taken practically on the line 2—2 of Fig. 1; Fig. 3 is a plan view of the sections of the baffle plate; Fig. 4 is a section through the baffle plates connected, the said section being taken on the line 4—4 of Fig. 2; and Fig. 5 is a detail view partly in section on the line 5—5 in Fig. 2, of one of the supporting brackets for the baffle plate.

Beneath the dome A of the boiler, within the latter, four or more brackets 10, are located, said brackets being screwed or otherwise secured at their upper ends to the shell of the boiler, as is best shown in Fig. 1. The brackets are L-shaped in general contour, the hori-

zontal member being at the bottom, and said member is provided with an upwardly extending member 11, as is best shown in Fig. 5. The brackets are preferably circular or round in cross section, and the lug or extension 11 at the bottom of each bracket, is provided with a slot adapted to receive a key 12, the latter being ordinarily somewhat wedge shaped.

The brackets 10 are adapted to support a baffle plate B, which plate is to be located beneath the opening connecting the body of the boiler with its dome, as shown in Fig. 1. The baffle plate is of the same shape as the cross section of the dome, or the opening connecting the dome with the boiler, but is of greater diameter; therefore, in order that the plate may be placed in position beneath the dome it is constructed in two sections 13 and 14. Each section is provided near its periphery with openings 15, through which openings the lugs or extensions 11 of the brackets 10 are adapted to pass and project. Each section is further provided at its inner edge with recesses 16, and at the inner side of the recesses with apertures 17. The apertures 17 and the adjoining recesses 16 are located at predetermined distances apart, and occupy the same position in each section, so that when the sections are brought together, as shown in Fig. 2, elongated openings are produced by two recesses being brought into registry, and an aperture is formed at each side of the opening thus formed. In addition to the recesses 16, semi-circular cavities 18 are formed in the inner abutting edges of the sections of the plate, and when the plate sections are brought together and placed in position beneath the dome, the semi-circular recesses registering form a circular opening through which the stand pipe or throttle steam pipe 19 passes in order that it may be carried to a connection with the throttle valve. The sections of the baffle plate are connected through the medium of essentially inverted T-shaped locking irons 20, the horizontal members of said irons being provided at their ends with upwardly extending, somewhat conically shaped spurs 21. The irons are circular in cross section throughout their length, and the central member or stem of each iron is provided with a slot adapted to receive a key 22, and the stem of

each iron is also adapted to receive a washer 23, against which the key has a bearing.

In the operation of placing the baffle plate in position one section is first lowered down into the dome until the spurs 11 of the brackets 10 adapted to receive that section extend upward through the openings 15 in the plate. This section having been placed in position and the keys 12 introduced into the brackets, the section is held steady enough to enable the operator to stand thereon, at least with one foot; the next section is then placed in position in like manner, that is placed upon the brackets, and the two sections are united by passing the locking irons 20 down through the openings formed by the recesses 16 in the plate sections, turning said irons and drawing them upward until their spurs 21 extend upward through the apertures 17 in the plate sections, whereupon the washers 23, are placed over the stems of the locking irons to an engagement with the top of the plate, at which time the keys 22, are passed through the slots in the stems of the locking irons to a bearing against the washers, and the locking irons are firmly held in position and the sections of the plate perfectly united. The baffle plate B is so located beneath the dome opening that a space of about an inch, an inch and a half, or two inches intervenes the peripheral surfaces of the plate and the opposed or contiguous surfaces of the boiler shell, and the steam in order to reach the dome must pass over the edges of the baffle plate, which course can not be followed by the water in the boiler, as the water when drawn up by suction or otherwise rises in somewhat of a conical shape, and so rising the water will strike the baffle plate at or near its center, and no portion of the water can by any possibility enter the dome, while the steam has free access thereto. By this means the steam in the dome is kept constantly dry, and all danger of wet steam is avoided. The device is exceedingly simple and durable, economic as well as effective, and it may be conveniently and expeditiously applied to any boiler.

Whenever stays are located in the dome the outer edges of the baffle plate are recessed to receive them. Some throttle connections are below the water line or nearly so, the throttle stem running through the boiler head, and in this event a recess must be made in the outer edge of one section of the plate to admit of the passage of the lever connecting the throttle stem with the valve. There is practically no opening in the baffle plate except that

through which the throttle steam pipe passes, and each section of the plate near its center is preferably provided with an eye bolt or handle by means of which it may be readily handled and also with pins near the margins extending upward from the plate to strike against the boiler shell when the plate is drawn to position.

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

1. The combination with a boiler, and its steam dome, of depending brackets in the boiler, and a sectional baffle plate supported by the brackets beneath the dome, said baffle plate having a detachable connection with the brackets, substantially as described.

2. The combination, with a boiler and its steam dome, and brackets secured to the boiler, of a baffle plate constructed in sections detachably connected together and having a detachable connection with the brackets, by which it is supported within the boiler beneath the dome, a space intervening the periphery of the plate and the shell of the boiler, as and for the purpose set forth.

3. The combination, with a steam boiler and the dome thereof, and brackets located within the boiler near the dome, of a baffle plate constructed in sections and supported by the said brackets beneath the opening connecting the dome with the boiler, a space intervening the periphery of the plate and the shell of the boiler, the said plate being provided with an opening for the passage of the stand pipe, and locking devices connecting the sections of the plate, as and for the purpose specified.

4. The combination, with a steam boiler, its dome, and essentially L-shaped brackets provided with upward extensions on their horizontal members and secured within the boiler adjacent to the dome, of a baffle plate constructed in sections and provided with openings to receive the extensions of the brackets, keys passed through said bracket extensions above the plate sections, essentially T-shaped locking devices connecting the sections of the baffle plate, keys introduced in the stem sections of the irons, the head sections of said irons being provided with upwardly-extending spurs, all combined for operation as and for the purpose specified.

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Witnesses:

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JOHN E. FOSTER.