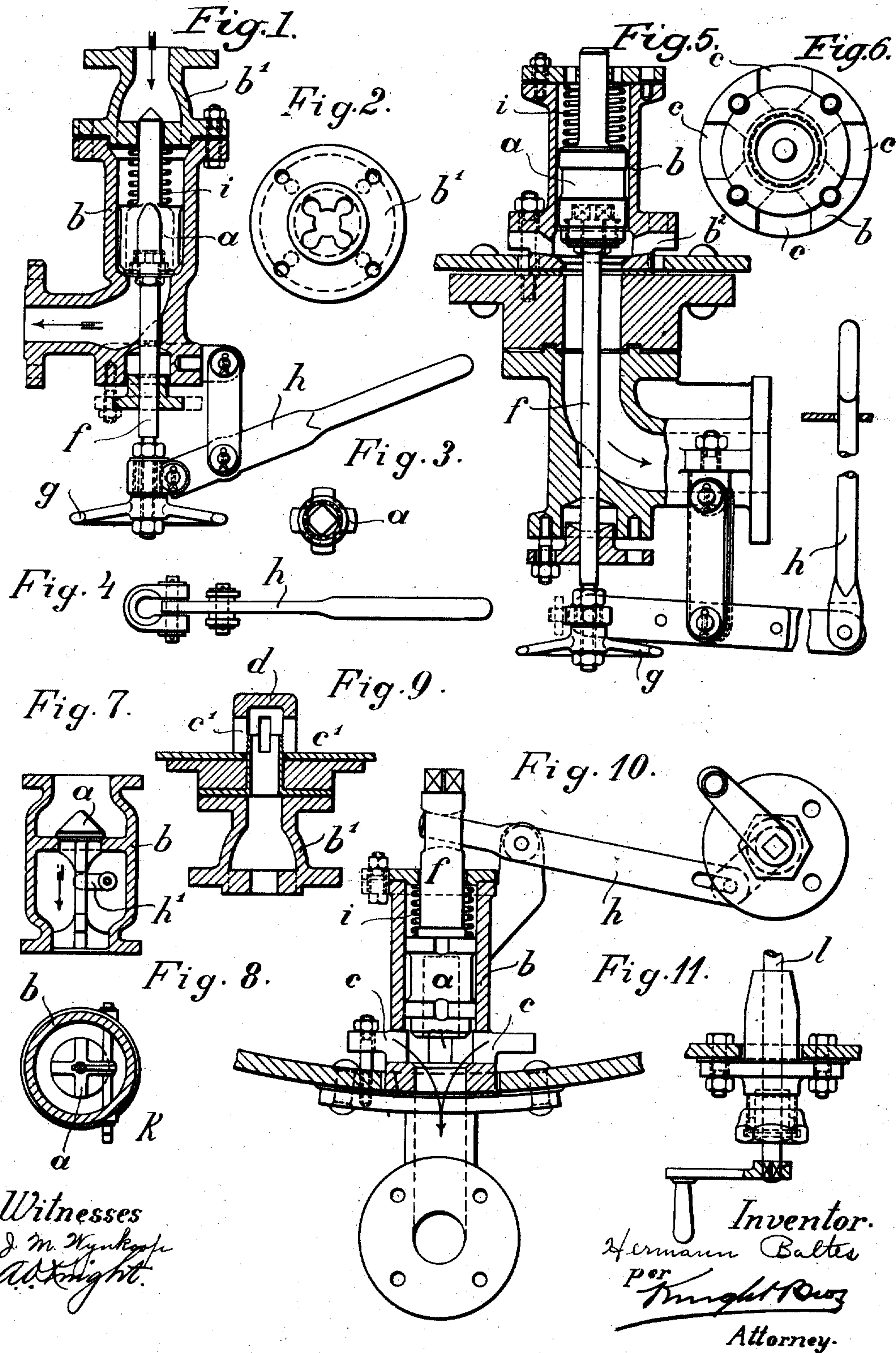


H. BALTES.
MUD EDUCTION VALVE FOR STEAM BOILERS AND THE LIKE.
APPLICATION FILED JULY 3, 1906.

994,438.

Patented June 6, 1911.



UNITED STATES PATENT OFFICE.

HERMANN BALTES, OF MÜNCHEN-GLADBACH, GERMANY.

MUD-EDUCTION VALVE FOR STEAM-BOILERS AND THE LIKE.

994,438.

Specification of Letters Patent.

Patented June 6, 1911.

Application filed July 3, 1906. Serial No. 324,544.

To all whom it may concern:

Be it known that I, HERMANN BALTES, a subject of the German Emperor, residing at München-Gladbach, Germany, have invented certain new and useful Improvements in Mud-Eduction Valves for Steam-Boilers and the Like, of which the following is a specification.

My invention is an improvement of a mud-eduction-valve for steam-boilers and the like and it consists of the novel features of construction and combination of parts hereinafter described, references being had to the accompanying drawing, which illustrates four forms, in which I have contemplated embodying my invention, and said invention is fully disclosed in the following description and claims.

The mud-eduction-valve for steam-boilers and the like which can be arranged before or inserted into the discharge-pipe, is kept closed by the pressure in the boiler and opened positively by means of a lever-arrangement, which can be put into action from outside the boiler, constructed according to the valve-arrangement and overcoming the boiler-pressure which acts on the valve-cone. Several radial openings in the valve-box itself, or in a special cap placed before the discharge-pipe in the boiler, through which the out-flowing water is forced to pass, cause a whirling motion in the water near the discharge-opening, thus stirring up the mud resting at this place and forcing it to flow out with the water.

In the accompanying drawing, Figure 1 is a mud-eduction-valve inserted into the discharge-pipe. Fig. 2 an under-view of the upper part of the valve. Fig. 3 an under-view of the valve-cone. Fig. 4 an under-view of the lever-arrangement, by means of which the valve is opened. Fig. 5 a mud-eduction-valve arranged before the discharge-pipe in the bottom of the boiler and which is opened by means of a lever-arrangement outside the boiler. Fig. 6 the under-view of the valve-box-flange b^2 with the radial openings arranged in it. Figs. 7 and 8 the horizontal and vertical section of a mud-eduction-valve of the simplest construction, opened by a cam attached to the spindle resting in the valve-box. Fig. 9 the arrangement of a cap with several openings, being placed on the discharge-pipe in the boiler, which effects a whirling motion of

the water near the discharge, in case that the mud-eduction-valve—Fig. 1—is inserted into the discharge-pipe. Fig. 10 a mud-eduction-valve, arranged before the discharge-pipe inside the boiler and opened by means of a lever-arrangement likewise inside the boiler. This lever-arrangement is however put into action from outside the boiler by means of a crank or the like. Fig. 11 the upper view of the crank operating the lever-arrangement.

The valve-cone a , which can be moved up and down in the valve-box b , is strongly attached to the valve-spindle f and can by the same by means of a lever-arrangement h , constructed according to the valve-arrangement, be lifted off its seat, overcoming the pressure of the boiler acting on it from above; by this the valve is opened positively but on the lever arrangement h being released the valve is immediately shut again by the pressure of the boiler. Above the valve-cone a , inside the valve-box a spring i can be provided, which also insures self-shutting of the valve after the lever-arrangement h has been released. For this purpose the lever-arrangement can likewise be worked from outside of the valve-box by means of a weight or a spring. The valve spindle f , and with it the valve-cone a , can at any time be turned by means of a wheel g attached to it, so that anything getting between the valve-cone and its seat can at any time be removed and the valve reseated, even while the boiler is working.

In case the valve is arranged in the bottom of the boiler (Figs. 5 and 10) the valve-box b will be provided with several radial openings c immediately over the valve-seat, through which the out-flowing water is forced to pass and which cause near the discharge-opening a whirling motion in the water, whereby the mud resting at this place is stirred up and forced to leave the boiler with the out-flowing water. If, however, the valve has been inserted into the discharge-pipe, a whirling motion of the water near the discharge-opening will be caused by placing inside the boiler before the discharge-pipe a cap d (Fig. 9) provided with several radial openings c^1 . The valve-cone a of the valve Fig. 7, which illustrates a very simple construction, will be lifted off its seat by a cam h^1 attached to the spindle k , resting in the valve-box b , by turning the spindle k .

If the mud-eduction-valve be constructed according to Fig. 10, the lever-arrangement *h*, which serves to open the valve, is arranged inside the boiler and operated by means of a spindle *l*, which is outside the boiler provided with a crank.

Having thus fully described my invention, what I desire to secure by Letters Patent is:

1. The combination with a steam boiler; of an eduction valve, comprising a valve seat, a valve-box extending inwardly from said valve-seat, a valve reciprocally mounted in said valve-box by means of a valve-stem; means carried by the valve stem for rotating the valve; and further means swiv-

eled to said valve stem whereby the valve may be reciprocated.

2. The combination with a boiler shell; of a valve seat formed therein; a valve moving to and from said seat in a line normal to the boiler shell; means rigid with said valve for rotating it on its own axis; and a lever connected with the valve by means of swiveled connections, said lever being adapted to reciprocate the valve axially.

HERMANN BALTES.

Witnesses:

CARL HUPP,
LOUIS VANDORN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
