

H. BOSENIUS.
 BALL JOINTED CLEANING DEVICE FOR GAS RECEIVERS.
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1,023,239.

Patented Apr. 16, 1912.

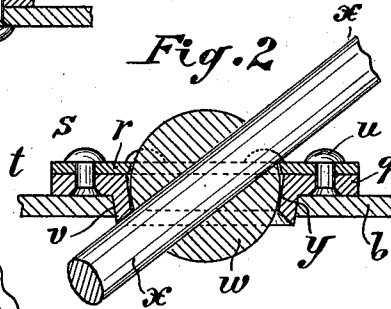
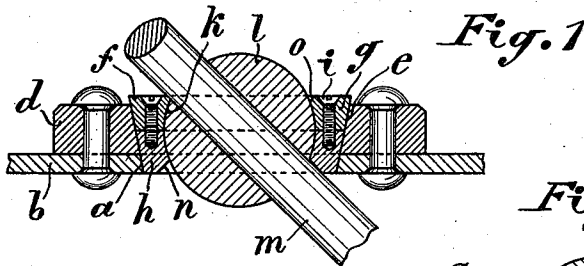


Fig. 3

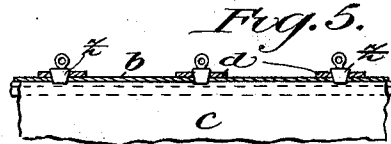
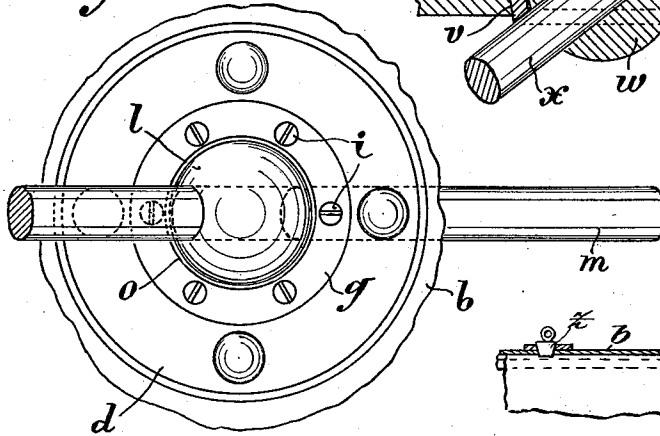


Fig. 5.

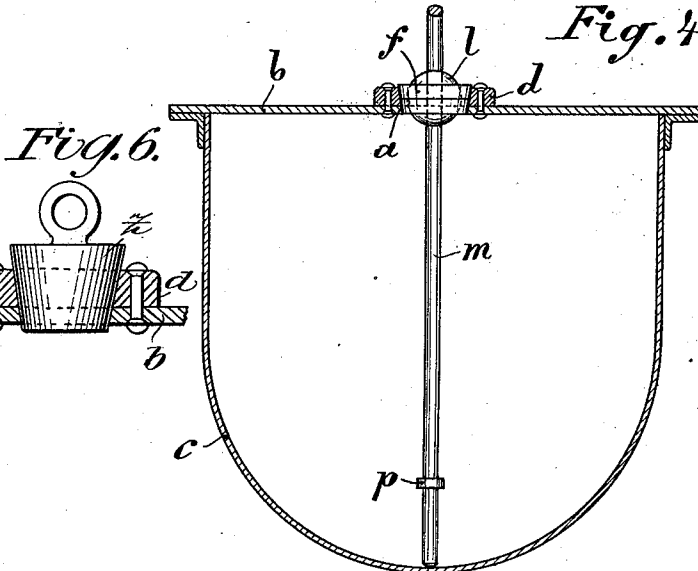
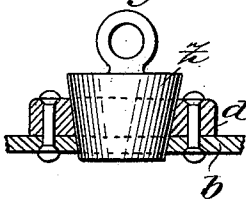


Fig. 6.



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BALL-JOINTED CLEANING DEVICE FOR GAS-RECEIVERS.

1,023,239.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HUGO BOSENIUS, a subject of the King of Prussia, and resident of 12 Humboldtstrasse, Bochum, in Westphalia, in the Kingdom of Prussia, Empire of Germany, have invented certain new and useful Improvements in Ball-Jointed Cleaning Devices for Gas-Receivers; 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.

My present invention relates to cleaning-devices such as are made use of for cleaning-out the trough-shaped gas-receivers usually employed in the manufacture of coke and gas. The cleaning-devices hitherto employed for this purpose chiefly consisted of a ball-joint built into the cover of the receiver mounted on top of the retorts, and of a bar passing through said ball-joint into the interior of said receiver. This kind of cleaning-devices with the cover of the usually trough-shaped receiver necessitates, however, that for each cleaning-opening a cleaning-device is provided, which for larger plants causes a considerable outlay of money.

To avoid these drawbacks is the object of my present invention, which is attained by building the ball, through which the cleaning-bar passes, not any more permanently into the cover of the receiver, but instead of it into a loose plug or stopper capable of being inserted into any one of the cleaning-openings of the receiver-cover after the plug which usually closes such opening has been removed. In this manner it is made possible to serve all the cleaning-openings by the aid of but one cleaning-device, which can be inserted into or removed from any one of these openings at a moment's notice.

In the accompanying drawing:—Figure 1 is a vertical sectional view of my new cleaning-device. Fig. 2 is a similar view of a modification thereof. Fig. 3 is a plan-view of the cleaning-device illustrated in Fig. 1. Fig. 4 is a cross-sectional view of the gas-receiver provided with my new cleaning-device. Fig. 5 is a longitudinal section on a reduced scale, through the top of the gas receiver. Fig. 6 is a detail of one of the openings showing it closed.

Each of the cleaning-openings *a* of the cover *b* of the gas-receiver *c* is in accordance with Fig. 1 encircled by a ring *d*, the open-

ing of which forms in connection with the opening *a* a seat *e* for the plug *f* having the shape of a frustum of a cone. The latter consists of the two divisions *g* and *h* united by means of the screws *i* to form a single rigid body and recessed at their center to form a seat *k* for the middle zone of the ball *l* through which the bar *m* is passed. The sharp edges of the seat *k* are chamfered off at *n* and *o* respectively to permit on the one hand the greatest freedom to the bar *m* and obtain on the other hand a seat *k* which not only shall sustain the ball *l* sufficiently but also prevent the escape of gas between said ball and its seat. The collar *p* on the bar *m* is provided for easily removing the plug *f* from the cleaning-opening *a*, which is accomplished by drawing the bar upward until said collar rests against the under-side of the ball *l* and thus transmits through its intimate contact with said plug any pull exerted on the bar to said plug and removes the latter in this manner from its seat.

To use the new cleaning-device it is only necessary to remove the common plug *z* usually closing the cleaning-hole from its seat *e* and replace it by the plug *f*, which on account of its conic shape is pressed into the seat *e* sufficiently tight under the influence of the bar *m* to prevent an accidental removal of the plug *f*. After the cleaning-work has been accomplished the plug *f* is removed by the aid of the bar *m* in the manner explained above, whereupon the cleaning-opening *a* is closed again by a common plug.

The modification of my invention illustrated in Fig. 2 differs from the cleaning-device shown in Figs. 1, 3 and 4 as its conic seating-surface does not extend from the bottom upward to the top, but is limited by a ring-flange *t* partly formed by an annular extension of the lower division *g* and partly by the upper division *r* of the plug *s*. Both divisions are here united by means of the rivets *u* which of course might be replaced by screws, as shown in Fig. 1, if so desired. The cleaning-opening *a* of the cover *b* is here shaped to form a seat *v*, wherein the plug *s*, aided by the flange *t*, is sustained during the cleaning-operation. The ball *w* encircling the bar *x* is here seated in the conic seat *y* of the lower plug-division *g* in such a manner that a gas-tight closure is formed, whereas the upper division *r* of said plug approaches the ball *w* only sufficiently

to prevent the latter from accidentally leaving its seat *y*. The insertion of this device into its seat and its removal therefrom coincides in every respect with the manipulations described in connection with the cleaning-device illustrated in Figs. 1, 3 and 4. Both embodiments of my invention are alike in their mode of operation and efficiency.

I claim:

1. In a device of the character described, a gas receiver having a plurality of circular cleaning ports, bearings secured to the receiver and having conical seats which are axially alined with said ports, said bearings being constructed to receive removable plugs to close the ports, an apertured rotatable ball adapted to be consecutively accommodated in the bearings upon the withdrawal of their respective plugs, a cleaning bar slidably engaging the ball aperture, and means on the bar for engaging the ball, whereby upon a withdrawal of the bar from the receiver, the

ball is automatically removed from the bearing.

2. In a device of the character described, a gas receiver having a plurality of circular cleaning ports, bearings secured to the receiver and having conical seats which are axially alined with said ports, said bearings being constructed to receive removable plugs to close the ports, a socketed plug adapted to be consecutively fitted to the bearings upon the withdrawal of their respective solid plugs, an apertured ball rotatable in the plug-socket, a cleaning bar slidably engaging the ball aperture, and means on the bar for engaging the ball, whereby upon a withdrawal the socketed plug together with the ball is automatically removed from its seat.

Signed by me at Barmen, Germany, this 19th day of January 1911.

HUGO BOSENIUS. [L. S.]

Witnesses:

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