No. 839,453. PATENTED DEC. 25, 1906.

G. W. CASE.

CAGE.

APPLICATION FILED JUNE 2, 1906.

Fig. 1

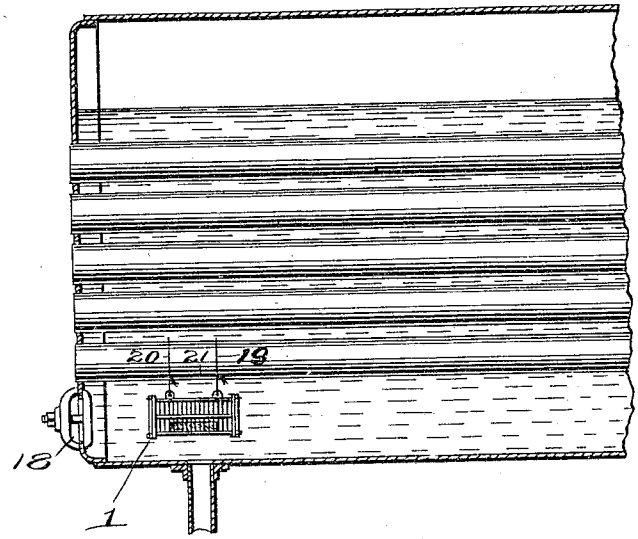


Fig. 2

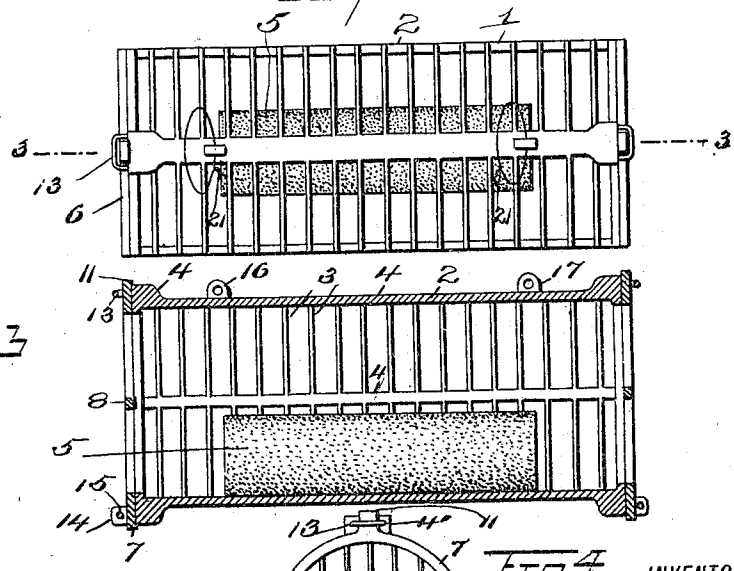


Fig. 3

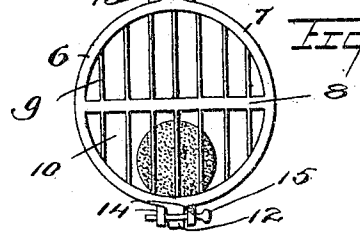


Fig. 4

WITNESSES:

N. M. Townsend

W. C. Jacobs

INVENTOR

George W. Case

BY

F. N. Gillett

ATTORNEY.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE W. CASE, OF LESTERSHIRE, NEW YORK.

CAGE.

No. 839,453. Specification of Letters Patent. Patented Dec. 25, 1906.

Application filed June 2, 1906. Serial No. 319,957.

To all whom it may concern.

Be it known that I, GEORGE W. CASE, a citizen of the United States, residing at Lestershire, in the county of Broome and State of New York, have invented certain new and useful Improvements in Cages, of which the following is a specification.

This invention relates to improvements in cages for containing metals, metallic substances, or amalgams or chemicals that are adapted to be dissolved within a boiler for preventing incrustation in the same.

The invention comprises the provision of a cage comprising an open body and doors removably secured thereto and means for sustaining the cage in a steam-boiler.

The invention further comprises the production of a cage preferably of cast material and formed with apertures in the body portion thereof, doors removably secured to the body portion formed with perforations therein, means for securing the doors in place, and means for sustaining the cage in position in a boiler.

The object in view is the production of a cage adapted to hold any suitable metal, combination of metals, or amalgam capable of dissolving in water, and means for sustaining the cage in a steam-boiler.

Another object is the production of a cage that is rigidly secured together, but will permit a metal, combination of metals, or amalgam placed therein to be dissvoled and passed through slots or apertures formed in the body portion thereof.

With these and other objects in view the invention comprises certain novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings, Figure 1 is a vertical section through part of the steam-boiler, showing one embodiment of my invention positioned therein. Fig. 2 is a top plan view of one embodiment of my invention, a solid metal substance, combination of metals, or amalgam being shown positioned therein. Fig. 3 is a view of Fig. 2 on line 3 3 therein, a solid metal substance, combination of metals, or amalgam being shown positioned therein. Fig. 4 is an end elevation of one embodiment of my invention, a solid metal substance, combination of metals, or amalgam being shown positioned therein.

In the preferred embodiment of my invention, I provide a cage, as 1, made preferably from cast material that is not easily melted. The cage, however, may be made of any convenient material, such as wire bent into proper shape or bars of metal or perforated metal or perforated sheet metal perforated by slots, all within the spirit of the present invention. In the preferred embodiment the cage 1 is provided with a body portion 2, which has apertures formed therein, making lattice-work, as 3, on all four sides of the body 2.

At suitable places around the body are strengthening portions 4, which hold the lattice-work 3 together and assist the same to retain the metal substance, combination of metals, or amalgam 5 positioned therein. At each end of the body 2 is a door 6. The door 6 is preferably made with a circular portion 7 and a central cross-bar 8 for holding in proper position the lattice-work 9 and 10. Formed on the circular portion 7 are lugs 11 and 12. One of the portions 4 has secured thereto or formed integral therewith an eye 13, through which the lug 11 is inserted when it is desired to secure the door 6 in position.

Formed on one of the portions 4 that is positioned opposite to the strengthening portion containing the eye 13 are ears or lugs 14, having apertures formed therein. After the lug 11 has been inserted through the eye 13 the lug 12 is placed between the lugs 14, and then a pin 15 is inserted through the apertures formed therein, which thus holds the door 12 positively in position. On the strengthening portion 4 which contains the eye 13 are formed lugs 16 and 17, having apertures passing therethrough. In placing the cage in position in the steam-boiler the same is inserted through a suitable manhole or opening, as 18, and the cage suspended to one of the tubes of the boiler or attached to any suitable portion of the structure within the boiler by means of wires 19 and 20. The wires are passed through the openings in the lugs 16 and 17, thence around the tube in the steam-boiler or other part of the interior structure of the boiler, and then brought together and twisted or otherwise secured in place, as at 21.

After the cage has been placed in position if it is desired to change the same it will only be necessary to open the manhole 18, remove

one of the doors 6, and place in the cage the metal, combination of metals, or amalgam desired to be used, and then secure again the door 6 into position, and the device is ready for operation.

As will be seen, the particular way of securing the door 6 in position is such that there is no danger of the same becoming rusted or hard to operate by means of continual use in a boiler.

I preferably use in my cage or container a metallic substance formed of one metal or combination of metals or amalgam capable of dissolving in water and preventing incrustation to the interior of the boiler. The metallic composition, combination of metals, or amalgam is adapted to prevent incrustation for a considerable length of time, as the same dissolves slowly, first breaking up into rather large pieces within the container and held there, and afterward dissolved into small particles and passed out through the boiler. For this reason the dissolving substance need be replenished but seldom.

I consider my invention particularly adapted to a compound as just described; but it will be evident that it is equally well adapted to be used with other compounds of a more or less solid nature, but with equally good results, as the lattice-work or apertures in my cage may be made large or small, as may be desired for the different kinds of metals, combinations of metals, or amalgams placed within the same.

What I claim is—

1. In a device of the character described, the combination with a tubular body portion formed of lattice-work, a reinforcing-ring at each end of the tubular body portion, a door detachably connected to each of the reinforcing-rings, and means whereby the body portion can be suspended within a boiler.

2. In a device of the character described the combination of a tubular body portion formed of lattice-work, a reinforcing-ring at each end of the body portion, lugs projecting outwardly from each of the reinforcing-rings, an eye attached to each of the reinforcing-rings at a point approximately opposite to the above-mentioned lugs, a door for each end of the body portion, the said door being provided with oppositely-projecting tongues which engage with the above-mentioned eyes and lugs and serve to hold the doors detachably in position, and means for suspending the device within a boiler.

3. In a device of the character described, the combination of a pair of reinforcing-rings, longitudinal ribs connecting the said rings, lattice-work arranged between the longitudinal ribs, doors detachably connected to the rings, and means for suspending the device in position.

4. In a device of the character described, the combination of a pair of rings, longitudinal ribs connecting the said rings, and transversely-disposed bars connecting the longitudinal ribs and forming a lattice-work, lugs projecting outwardly from the reinforcing-rings, an eye projecting from each of the rings at the point opposite the above-mentioned lugs, a door fitting against each of the rings and provided with oppositely-projecting tongues, one of said tongues fitting under the above-mentioned eye while the opposite tongue is detachably connected with the above-mentioned lugs, and means carried by one of the above-mentioned longitudinal ribs for suspending the device in position.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE W. CASE.

Witnesses:
N. M. TOWNSEND,
JOSEPH P. MANGAN.