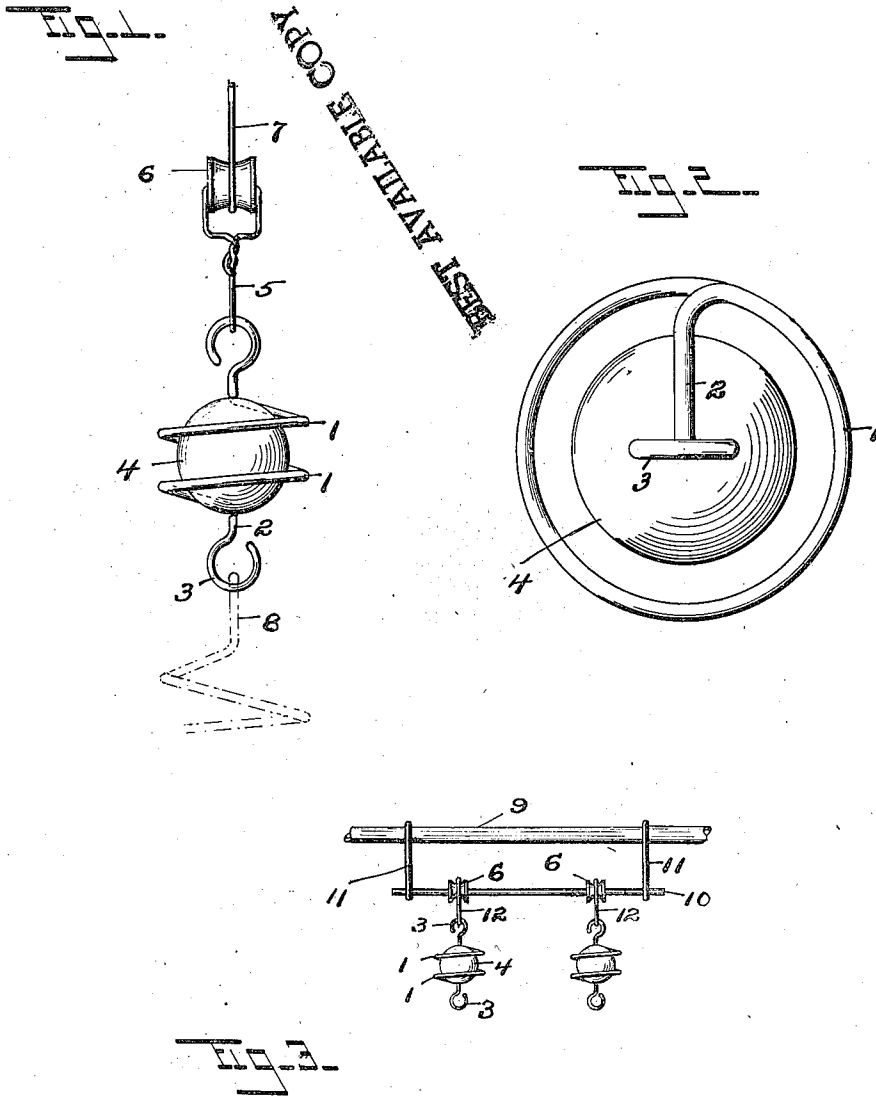


F. A. IVES.
CONTAINER FOR METAL BOILER CLEANERS.
APPLICATION FILED JULY 24, 1909.

1,034,711.

Patented Aug. 6, 1912.



WITNESSES:

Florence H. Monk.
Gertrude J. Brethauer

INVENTOR

Frederic A. Ives

BY

George E. Hall
ATTORNEY

UNITED STATES PATENT OFFICE.

FRIEND A. IVES, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE CONNECTICUT METAL BOILER CLEANER COMPANY, OF NEW HAVEN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

CONTAINER FOR METAL BOILER-CLEANERS.

1,034,711.

Specification of Letters Patent.

Patented Aug. 6, 1912.

Application filed July 24, 1908. Serial No. 509,434.

To all whom it may concern:

Be it known that I, FRIEND A. IVES, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Containers for Metal Boiler-Cleaners, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to new and useful improvements in containers for metal boiler cleaners, and has for its object, among other things, to provide a device of this character that is simple in its design, may be constructed at the minimum cost, and having means connected therewith whereby two or more containers may be readily secured together.

To these, and other ends, my invention consists in the container for metal boiler cleaners, having certain details of construction and combinations of parts, as will be hereinafter described and more particularly pointed out in the claim.

Referring to the drawings, in which like numerals of reference designate like parts in the several figures; Figure 1 is an elevation of my improved device complete showing one form of attaching means; Fig. 2 is an enlarged plan view thereof; and Fig. 3 illustrates one of the many means by which a plurality of the containers may be secured within a boiler parallel to each other.

My device is especially designed to hold a metal boiler cleaner capable of being dissolved in water, and having means connected therewith for sustaining the same in a boiler, either singly or in a battery, consisting of two or more separate containers.

The cleaner is usually composed of a compound of metals such as antimony, aluminum, bismuth, copper, lead, tin, mercury and zinc, used together, or in groups of two or more metals, as desired or necessary for the purpose of meeting the different steam pressures in boilers and water of varying compositions used therein. The action of the cleaner is both electrolytic and chemical, in that the container is the negative pole, and the cleaner the positive pole, which act together to disintegrate the cleaner, thereby creating an electric current of very low voltage, and by reason of such disintegra-

tion hydrogen gas is formed, which purifies the water and prevents pitting, formation of scale, and priming or foaming of the boiler. It is desirable that the container should not have direct connection with the metal parts of the boiler on account of the electrical action above described, and I have therefore provided means for suspending the same from said metal parts through non-conducting elements.

In the drawings the container is shown as being constructed of bent wire having a circular body portion 1 formed from parallel coils of the wire that are bent inwardly near their ends at 2, and terminate in the loops 3. The metal cleaner 4, preferably globular in form, is placed within the body portion and held against accidental displacement therefrom by the inwardly projecting wire portions 2, one of which is bent in the position shown in the drawings, after the cleaner 4 has been placed within the coil. A new cleaner block is substituted when it is necessary by simply bending the wire 2 outwardly so as to open the end of the coil and returning it to its original position after the cleaner has been placed therein.

The container is suspended within the boiler and immersed in the water therein by any one of many desirable means adopted for this purpose. In the drawings the container is shown in Fig. 1 suspended by a wire 5 from a block 6, preferably formed of porcelain or other non-conducting material, which is in turn secured to the tubes or other part in the boiler by a wire 7. Any number of these containers may be secured together, one above the other, and have a common axis, by connecting the loops of the containers together, as shown by the broken lines 8 in Fig. 1, a method especially desirable for upright boilers. In a horizontal boiler a plurality of containers are preferably secured to the boiler tube 9 upon a rod 10 that is suspended by wire loops from said tube, and having a block 6 thereon, from which the containers are suspended by loops 12. This method of suspension is shown in Fig. 3, wherein two of the containers are illustrated, but it is apparent that the number may be increased as desired.

While it is desirable to connect the con-

tainers with the metal parts of the boiler through a non-conducting block, such as the block 6, yet they may be suspended within the boiler directly from one of the metal parts.

5 The wire shown in the drawing is round, but it may be flat or any other shape if desired, and the number of coils may be reduced to one or increased in number so as
10 to provide a container that will accommodate a plurality of cleaner blocks.

There are minor changes and alterations that can be made within my invention, aside from those herein suggested, and I would
15 therefore have it understood that I do not limit myself to the exact construction herein shown and described, but claim all that falls fairly within the spirit and scope of my invention.

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

The combination with a container, con-

structed of a single piece of wire, having a body portion formed with parallel coils, 25 the end coils thereof arranged so as to form a removable closure for each end of said container and provide means for securing a plurality of containers together or the container to an independent member; of a 30 metal boiler cleaner, held within said container; and means for suspending said container, comprising a block of non-conducting material connected with said container and constructed so as to be separably con- 35 nected with a fixed part, whereby if said containers are arranged in series each container will be insulated from every other container in the series.

In testimony whereof I affix my signature 40 in presence of two witnesses.

FRIEND A. IVES.

Witnesses:

GEORGE E. HALL,
FLORENCE H. MONK.