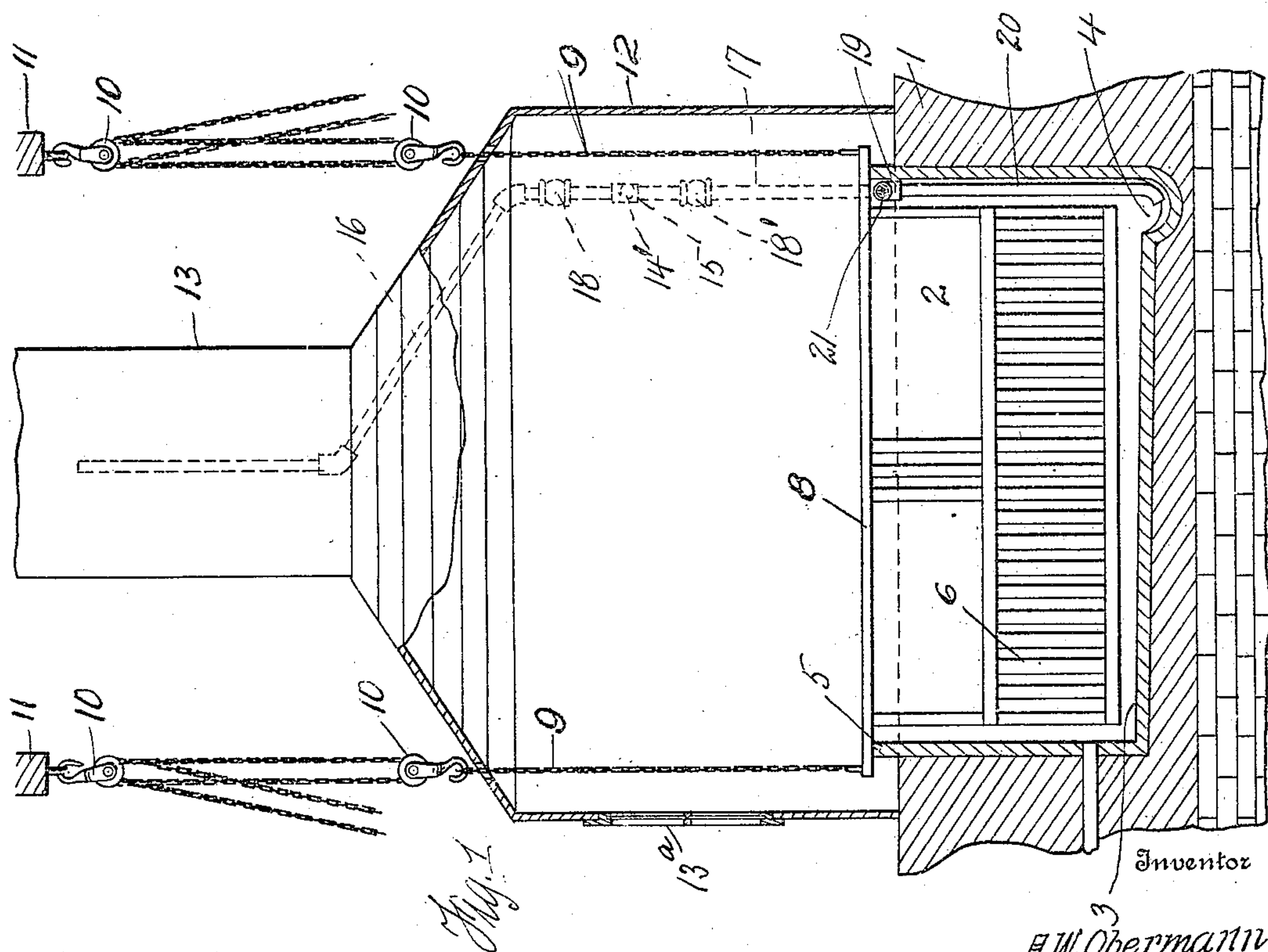
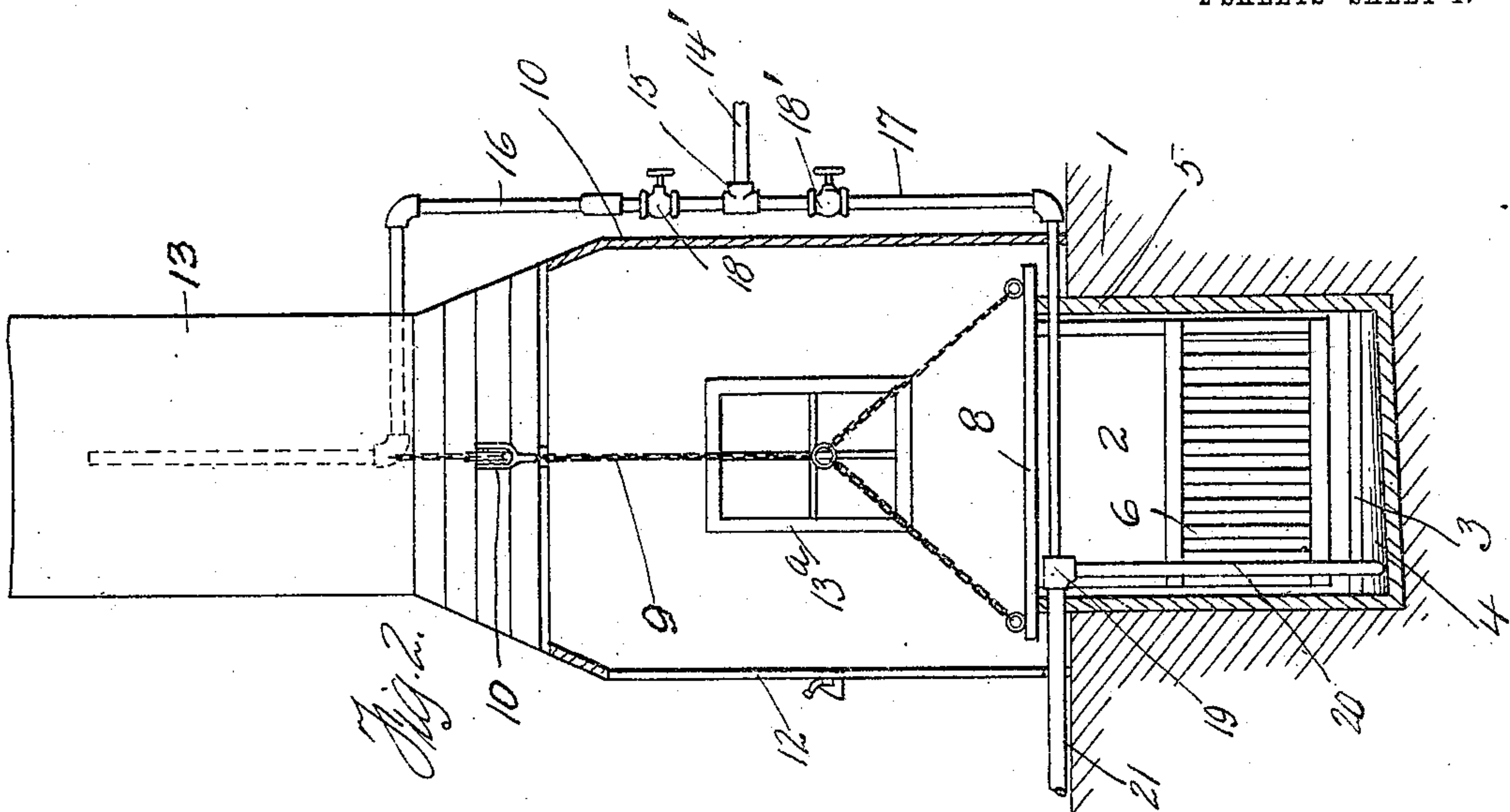


A. W. OBERMANN.
CLEANSING APPARATUS FOR METALLIC WARE.
APPLICATION FILED OCT. 18, 1909.

961,792.

Patented June 21, 1910.

2 SHEETS—SHEET 1.



Witnesses

Samuel Payne
O. H. Butler

By

A. C. Everett & Co.

Attorneys

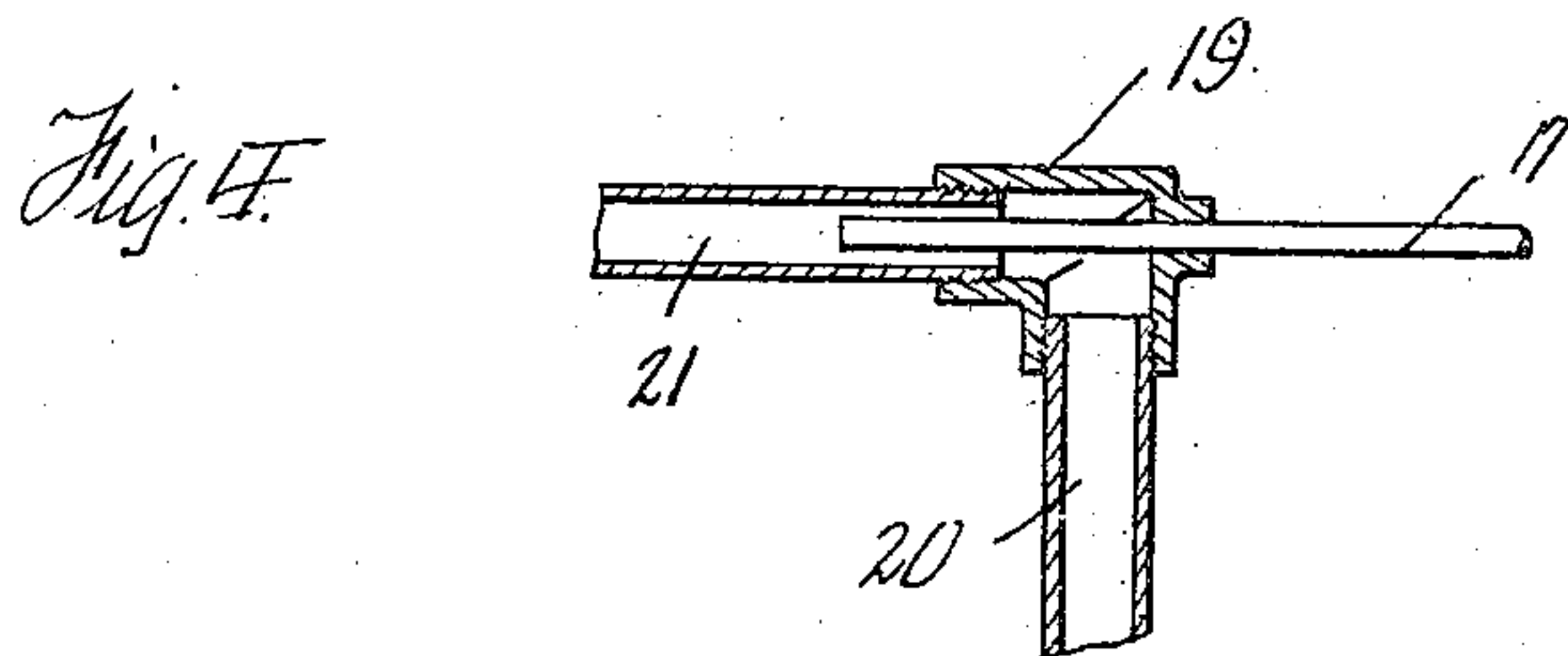
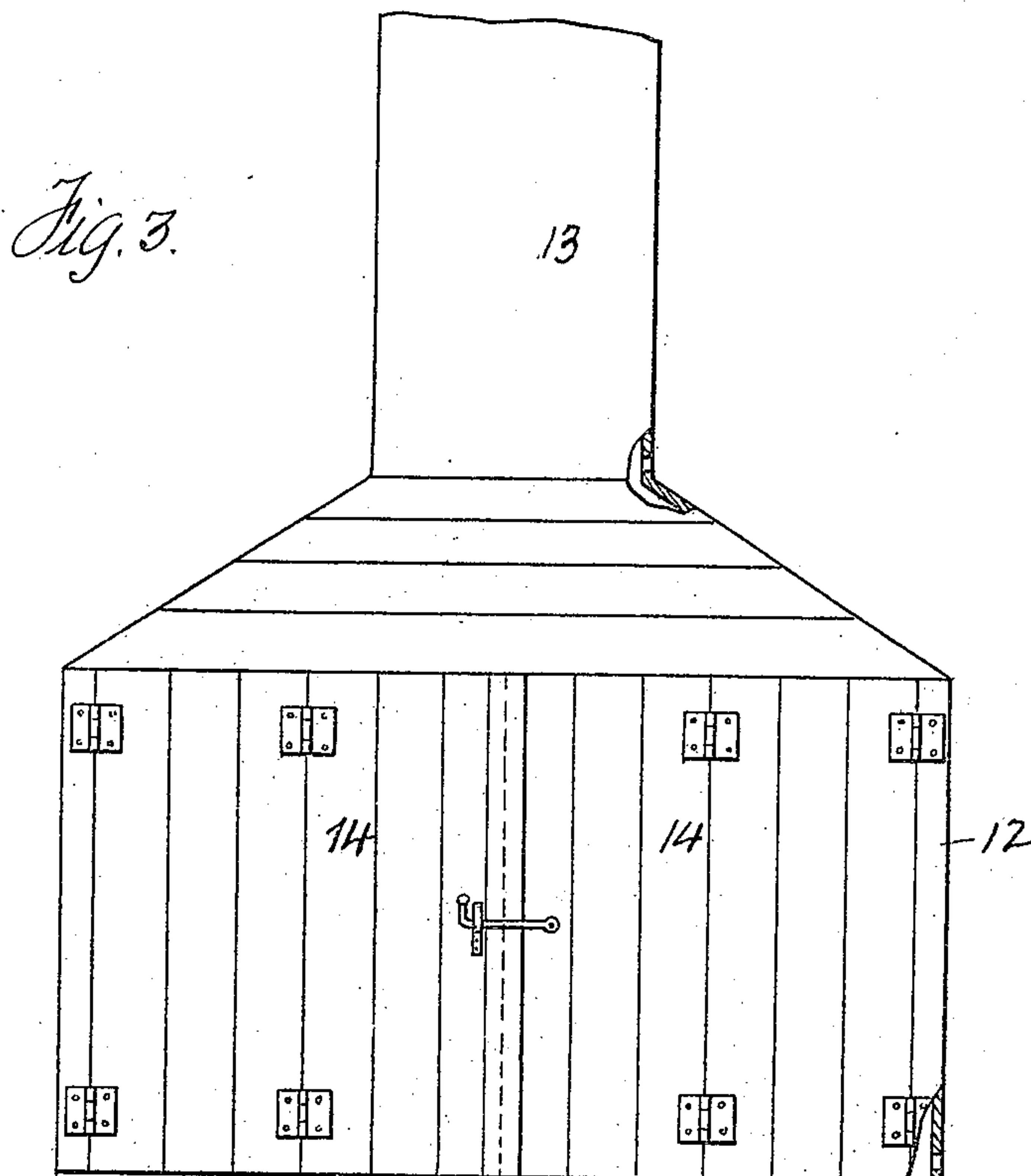
Inventor
A. W. Obermann.

A. W. OBERMANN.
CLEANSING APPARATUS FOR METALLIC WARE.
APPLICATION FILED OCT. 18, 1909.

961,792.

Patented June 21, 1910.

2 SHEETS—SHEET 2.



Witnesses

Samuel Payne
R. H. Butler

Inventor

A. W. Obermann.

By

A. C. Everett & Co.

Attorneys.

UNITED STATES PATENT OFFICE.

AUGUST W. OBERMANN, OF JOHNSTOWN, PENNSYLVANIA.

CLEANSING APPARATUS FOR METALLIC WARE.

961,792.

Specification of Letters Patent. Patented June 21, 1910.

Application filed October 18, 1909. Serial No. 523,254.

To all whom it may concern:

Be it known that I, AUGUST W. OBERMANN, a citizen of the United States of America, residing at Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Cleansing Apparatus for Metallic Ware, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a cleansing apparatus for metallic ware, and more particularly to an apparatus for thoroughly cleaning pots, pans, and receptacles made of pressed sheet metal and cast iron ware.

The object of my invention is the provision of a novel apparatus for subjecting a number of receptacles to a cleansing bath to remove rust, incrustations, impurities and all foreign matter that might adhere to pressed sheet metal ware and thereby prevent the same from being enameled, coated, or properly finished.

In the cleaning of pressed or molded metal ware by the use of acid, considerable trouble is experienced by workmen due to the dangerous fumes or gases generated and liberated by the chemical action which takes place when the acid contacts with the metal.

The trouble has been of that degree where lives have been sacrificed, and it is one of the objects of the present invention to provide a safe apparatus for cleansing metal ware, wherein the arrangement and construction of the apparatus prevents workmen from inhaling fumes and gases liberated by the chemical action of the metal ware and acid.

Another object of the invention is to provide novel means for creating a draft in connection with the apparatus for positively removing obnoxious and dangerous fumes or gases generated and liberated by the chemical action which takes place in the apparatus, so, also, for removing acids or the pickling ingredient from the apparatus.

Further, my invention aims to provide an apparatus for cleaning metal ware, wherein the acid or cleansing solution can be safely housed, agitated, and maintained at a temperature which will thoroughly remove all foreign matter from ware deposited in the cleansing solution. In connection with the apparatus, I make use of an immersing cage, which permits of cleansed ware being drained before the same is handled, thus ob-

viating the necessity of workmen handling the ware to be cleaned before the acid is fully drained therefrom; and also preventing the waste of the acid which waste is not only expensive, but is detrimental to objects with which it comes in contact.

The invention will be hereinafter more fully described, and reference will now be had to the drawing, wherein I have illustrated a preferred embodiment of my invention, but it is to be understood that the structural elements thereof can be varied as to shape, proportion and minor details of construction without departing from the spirit or scope of the invention.

In the drawings:—Figure 1 is a vertical longitudinal sectional view of the apparatus. Fig. 2 is a vertical cross sectional view of the same. Fig. 3 is a front elevation of the hood of the apparatus, and Fig. 4 is a longitudinal sectional view of the injector forming a part of the apparatus.

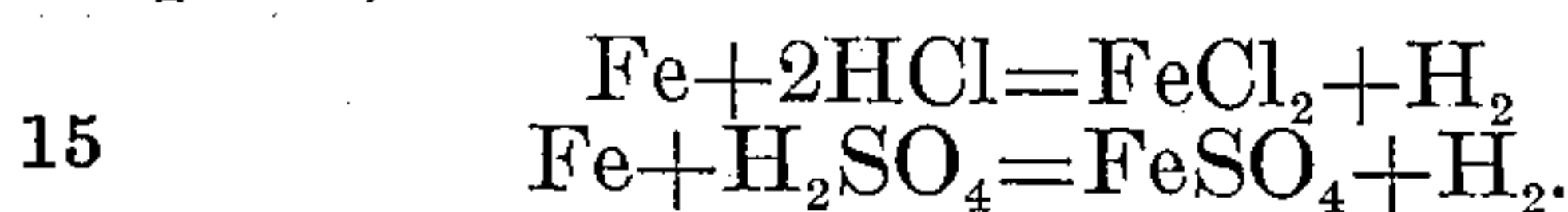
In the drawings, 1 designates the floor of a factory in which metal ware is produced, this floor being made of concrete or masonry. The floor 1 is provided with a large recess 2, similar to a tank, said recess having an inclined bottom 3 terminating at one end of the recess in a gutter 4.

5 designates a wooden or vitreous lining for the recess 2 and the gutter 4 thereof, said lining extending above the surface of the floor and being of a material not susceptible to the action of the chemical or cleansing ingredient adapted to be placed in the recess or tank for cleansing the contents thereof.

6 designates a cage or large perforated receptacle adapted to fit within the recess or tank and hold metal ware, whereby all sides and surfaces of the ware are exposed to the chemical or cleansing solution placed in the lined recess or tank. The upper end of the cage 6 is provided with supporting bars 8, adapted to rest upon the upper edge of the lining 5 and suspend the cage within the recess or tank. The ends of the bars 8 are connected by chains or cables 9 to blocks 10, constituting part of the hoisting device suspended from beams or girders 11 arranged above the floor 1. Manual labor or suitable power driven mechanism can be utilized for operating the hoisting devices to elevate the cage 6 above the floor, whereby easy access can be had to the articles within the cage, and whereby acid or the

cleansing solution can drain from articles and said cage.

Since nitric, sulfuric, hydrochloric and other acids can be used as a cleansing solution, it is obvious that when the metal ware is immersed in such acids, that dangerous fumes and gases are liberated, which may immediately or eventually impair and destroy the lives of workmen employed for operating the apparatus. For instance, when hydrochloric and sulfuric acids are used, the following chemical actions take place,



Besides hydrogen being liberated the impurities of the metal ware cause vapors of chlorin and other dangerous vapors to be liberated.

To safely and quickly carry off the vapors and gases above referred to, I provide a rectangular hood 12 having an exhaust stack or flue 13, to a chimney or the atmosphere. The hood 12 is adapted to rest upon the floor 1 over the lined recess or tank 2 and prevent a dissemination of the gases or vapors in the compartment or room in which the apparatus is located. Easy access is had to the interior of the hood 12 through the medium of folding hinged doors 14, and the interior of the hood can be observed through a window 13^a.

The metallic ware to be cleaned by the apparatus is placed in the cage 6 and immersed in the acids within the tank or recess 2, and in order to provide means for increasing the activity of the acid or cleansing solution by agitation so as to cause the same to contact with all parts of metal ware located in the cage, and also provide sufficient draft to carry off the fumes and gases liberated by the chemical action that takes place within the tank, and at the same time provide means for removing the acid from the tank, I have devised the following construction.

14' designates an air or steam supply pipe at the rear side of the hood 12, said pipe having a T 15 provided with branch pipes 16 and 17, provided with valves 18, 18' respectively for controlling the admission of air or steam to the branch pipes 16 and 17. The branch pipe 16 extends upwardly into the chimney or exhaust flue 13 of the hood 12, and is adapted to create a partial vacuum within the hood 12 that will tend to remove all gases or fumes that are liberated by the chemical action that takes place within the tank or recess 2, the fumes or gases swiftly passing off through the chimney or exhaust flue 13.

The branch pipe 17 extends across the end of the tank or recess 2 above the gutter 4 and serves functionally as an injector, said

branch pipe extending into an elbow 19 connecting the stand pipe 20 with a drain pipe 21, said stand pipe having the lower end thereof within the gutter 4, while the drain pipe 21 extends to a suitable receiving tank or waste outlet (not shown) for the acids.

In the operation of the apparatus, the valve 18' in the branch pipe 17 is normally maintained in a closed position and valve 18 in pipe 16 is opened whereby air or steam from the pipe 14 will pass into the chimney or exhaust flue 13 and facilitate the rapid removal of gases or fumes from the hood 12. The valve 18' is only opened when it is desired to remove the acids from the tank or recess 2, either to clean the tank or recess 2 or to renew the acids. It is obvious that when steam or air is admitted to the drain pipe 21 that a vacuum or suction will be created in the pipe 20 that will withdraw the contents of the tank or recess 2 and the gutter 4 thereof.

I desire to call attention to an important feature of my invention adapting it particularly for use as a tank for sulfuric acid, which prevents a large waste of the acid. Heretofore, it has been the practice, to make the tanks for use in connection with sulfuric acid of pieces of wood bolted or otherwise secured together, and it was only a matter of time until the acid ate its way or seeped through the cracks and bolt openings of the tank, consequently, the acid left in the tank over night would be wasted by morning, and besides considerable expense being incurred in connection with the waste, the fumes of the acid in the vicinity of the tank are very disagreeable. To obviate this waste, I have constructed the tank of concrete, and it is impossible for any leakage or waste to take place from acid stored in such a tank.

I would have it understood that my apparatus is applicable for any process of treating metal ware with acids or similar liquids, where dangerous and ill smelling fumes and gases are liberated by a chemical action.

Having now described my invention what I claim as new is:—

1. An apparatus of the type described, comprising a tank having the bottom thereof provided with a gutter, a movable cage suspended in said tank and adapted to contain metallic ware, a hood mounted over said tank, an exhaust stack carried by said hood, hinged doors carried by said hood to permit of easy access being had to said cage, a pipe extending into said hood and into the gutter of said tank for removing the contents of said tank, a steam supply pipe extending into said tank for agitating the contents thereof, and means for elevating said cage.

2. An apparatus of the type described, comprising a tank, a cage movably mounted

in said tank, a hood mounted over said tank, an exhaust stack carried by said hood, a pipe extending into said hood and said tank for removing the contents of said tank, a steam supply pipe extending into said tank for agitating the contents thereof, means for elevating said cage, and means whereby easy access can be had to said hood.

3. An apparatus of the type described, comprising a tank, a cage movably mounted in said tank, a hood mounted over said tank, an exhaust stack carried by said hood, a pipe extending into said hood and said tank for removing the contents of said tank, a steam supply pipe extending into said tank for agitating the contents thereof, and means for elevating said cage.

4. An apparatus of the type described, comprising a tank, a cage adapted to be lowered into said tank, a hood mounted over said tank and having an exhaust stack, a pipe extending into said tank for removing the contents thereof, and a steam supply pipe extending into said tank for agitating the contents thereof.

5. An apparatus of the type described, comprising a tank, a cage adapted to be lowered into said tank, a hood mounted over said tank and having an exhaust stack, means for elevating the cage from the tank to bring it within the hood, doors carried by the hood for affording access to the cage when the latter is within the hood, and a pipe extending into said tank for removing the contents thereof.

6. An apparatus of the type described comprising a tank adapted to contain a cleansing solution and having a lining projecting above the top of the tank, a cage adapted to be lowered into said tank and be supported on the upper end of said lining,

a hood arranged over the tank for exhausting the fumes liberated by the chemicals in the tank, means for elevating the cage within the hood and holding the same in suspension above the tank, and doors in said hood for affording access to the cage when the latter is held suspended in the hood.

7. An apparatus of the type described, comprising a tank, a cage adapted to be lowered into said tank, a hood mounted over said tank and having an exhaust chimney, a pipe extending into said exhaust chimney for establishing a draft therein, and a pipe extending into said tank for removing the contents thereof.

8. An apparatus of the type described, comprising a tank, a cage adapted to be lowered into said tank, a hood mounted over said tank and having an exhaust chimney, a pipe extending into said chimney for establishing a draft therein, a pipe extending into said tank for removing the contents thereof, and a branch of the first mentioned pipe extending into the last mentioned pipe for creating a partial vacuum in the last mentioned pipe.

9. The combination with a tank, and a hood mounted over said tank and provided with an exhaust chimney, of a pipe extending into said exhaust chimney for establishing a draft therein, a drain pipe extending into said tank for removing the contents thereof, and a branch of the first mentioned pipe extending into said drain pipe creating a partial vacuum in said pipe.

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

AUGUST W. OBERMANN.

Witnesses:

MAX H. SROLOVITZ,
H. C. EVERT.