

C. E. LEFFEL.
 HOOD FOR ELECTROPLATING TANKS.
 APPLICATION FILED APR. 16, 1913.

1,085,742.

Patented Feb. 3, 1914.

FIG. 1

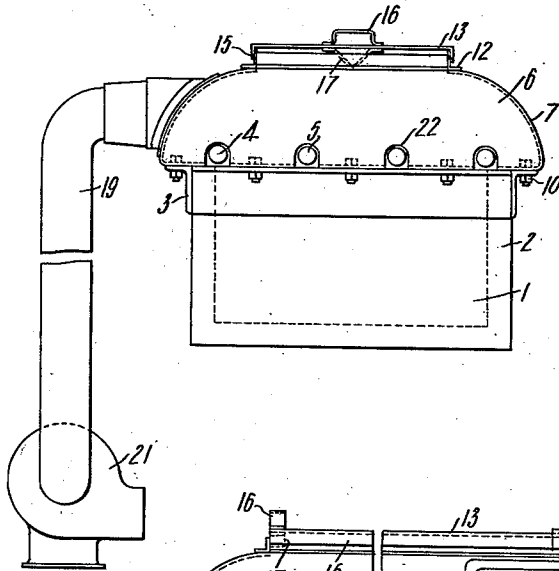


FIG. 4

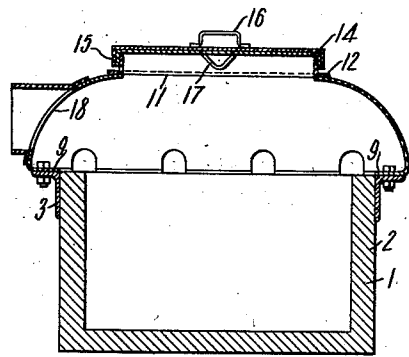


FIG. 3

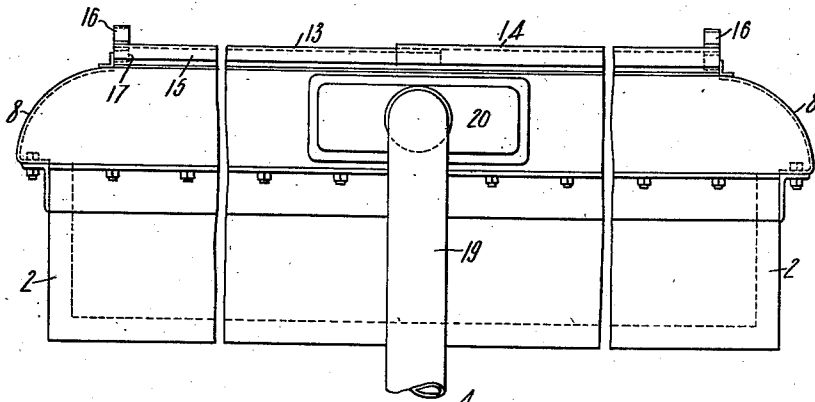
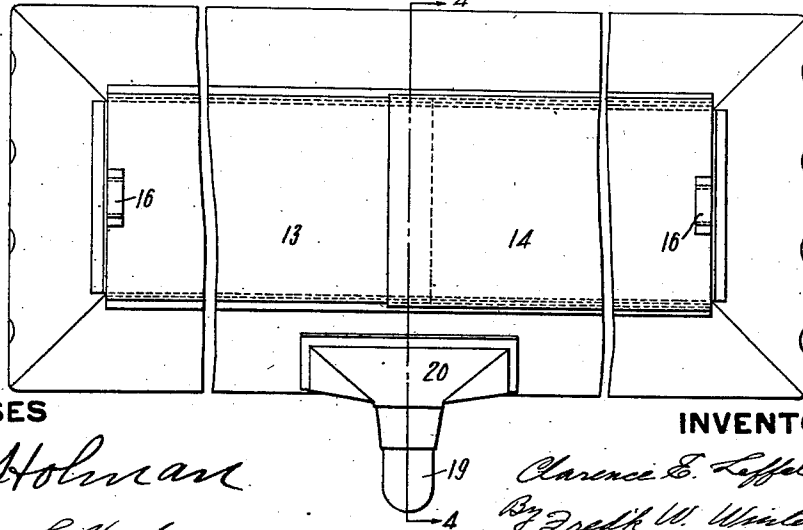


FIG. 2



WITNESSES

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UNITED STATES PATENT OFFICE.

CLARENCE EDWARD LEFFEL, OF NIAGARA FALLS, NEW YORK, ASSIGNOR TO THE SPIRELLA COMPANY, INCORPORATED, OF NIAGARA FALLS, NEW YORK, A CORPORATION OF NEW YORK.

HOOD FOR ELECTROPLATING-TANKS.

1,085,742.

Specification of Letters Patent.

Patented Feb. 3, 1914.

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To all whom it may concern:

Be it known that I, CLARENCE EDWARD LEFFEL, a resident of Niagara Falls, in the county of Niagara and State of New York, have invented a new and useful Improvement in Hoods for Electroplating-Tanks, of which the following is a specification.

This invention relates to hoods for electro-plating tanks.

The object of the invention is to provide an improved construction and arrangement of hood for electro-plating tanks, whereby the fumes, gases and vapors arising from the electrolyte in the tank and produced by the electro-plating action may be conducted away and prevented from escaping into the open air.

Various electrolyte solutions are used in the electro-plating industry. In many cases the electrolyte is of such composition, and the reactions taking place within the cell are such, that fumes, gases or vapors are given off by the cell into the open air. Such fumes and gases are often obnoxious and disagreeable and may, as when the electrolyte is a cyanid solution, be actually poisonous. For this reason it is often dangerous for the operators to work around or near the plating tank, and usually it is necessary to provide a special building or room in which the tanks are placed, so that the vapors or fumes given off will not affect other surrounding apparatus or materials.

In the drawings, which represent one embodiment of the invention, Figure 1 is an end elevation of an electro-plating tank with my invention applied thereto; Fig. 2 is a plan view thereof; Fig. 3 is a side elevation of the hood and the upper part of the tank; and Fig. 4 is a cross section on the line 4-4, Fig. 2.

The tank 1 which contains the electrolyte may be of any of the usual forms and is illustrated as rectangular, being longer in one direction than in the other, with side and end walls 2 provided at their upper edges either externally or internally, and shown as externally, with angle irons 3. Suitably supported over the tank are the anode supports 4 and the cathode supports 5 which

are properly insulated from each other and connected up in the electric circuits, the articles to be plated being suspended from the cathodes, as is usual.

Upon the tank 1 is supported a hood 6, preferably formed of galvanized iron segments soldered or otherwise secured together at their edges and having side walls 7 and end walls 8, which are arched or curved upwardly and toward each other with their concave sides downwardly, as shown in Fig. 4, so the hood is dome-shaped and hollow or open on its under side. The lower edges of the side and end walls are bent or flanged inwardly, as at 9, to form flanges which rest upon the angle irons 3. The hood may rest loosely upon the plating tank, but may, if desired, be secured thereto by bolts or rivets 10, which must be insulated from the tank, and which pass through the flanges 9 and angle irons 3. Preferably, however, no attempt is made to seal the hood tightly to the tank since slight spaces or gaps between the hood and the tank through which air may be drawn into the space beneath the hood are an advantage rather than a detriment.

The top of the hood 6 is provided with a longitudinal opening 11 surrounded by the parallel edges of the side and end walls 7 and 8, which are either bent or flanged upwardly or are provided with separate flanges or angles 12 secured thereto. The arching or curving of the side and end walls 7 is preferably such that the edges of the opening 11 will be separated as widely as possible in order to give plenty of room for access, through the opening 11, to the cathode supports 5, so that the articles to be plated can be readily inserted or removed. The angles or flanges 12 on the side walls 7 form parallel guides which support, and along which slide, adjustable covers 13 and 14, which overlap and are provided at their side edges with downwardly projecting members 15, lying on the outside of or embracing the two side flanges 12 of the hood. Preferably, one of the covers, as cover 14, is made slightly wider than the other cover, so that the larger cover can be slid over the

smaller, or the smaller cover can be slid beneath the larger. Both covers are consequently slidable substantially the full length of the hood. Preferably, also, said covers
 5 are provided with suitable handles 16 and, at their ends and on their under surfaces, they are provided with downwardly projecting straps or stop members 17, arranged to
 10 abut the end flanges 12 of the hood and prevent the covers from being moved too far.

As shown in the drawings, both of the covers are bodily removable from the hood, so that the opening at the top thereof can be fully opened. This permits plating racks
 15 loaded with articles and of substantially the full length of the tank to be readily inserted and placed in position on the conducting bars. The covers are both slidable in order
 20 that either end of the tank may be opened separately for the purpose of inspection of the articles to be plated.

One of the side walls 7 of the hood is provided with an elongated longitudinal slot or opening 18, providing communication
 25 between the space beneath the hood and a conduit 19. Conduit 19 is connected at its end to a funnel-shaped or flaring member 20, formed of sheet metal and secured
 30 to the outer surface of the hood wall 7 over the opening 18. The opening 18 is elongated, and member 20 is funnel-shaped or flared, in order that the gases, fumes or vapors may be drawn out from both ends
 35 of the tank. Conduit 19 leads to a suitable suction producing device such as the centrifugal pump or fan 21, although any convenient or preferred form of pump or fan may be used. Openings or slots 22 are also
 40 provided in the lower edges of the end walls 8 of the hood, through which project the anode and cathode supports 4 and 5, so that electrical connection thereto may be made.

The articles to be plated are suspended from the cathode supports 5 and are placed
 45 in position through the opening 11, the covers 13 and 14 being adjusted or slid longitudinally on the flanges 12 to open the hood. When the plating action begins the fan 21 is started and this exhausts the air,
 50 gas fumes and vapors from the space beneath the hood 6, and carries it out from the room in which the plating tank is located. It is unnecessary that the joints between the hood and tank be tight, or that the covers
 55 13 and 14 fit tightly. In fact, it is better to arrange the parts so that some openings at least will be formed, thereby permitting air to enter from the outside.

The construction is simple and may be readily applied to all existing forms of
 60 plating tank. It moreover, does not need to be secured to the tank and is therefore portable so that it can be moved around from one tank to another and connected up to
 65 the conduit system leading to the pump or

fan. The hood described is also comparatively inexpensive and prevents the liability of any of the fumes or gases escaping into the open air.

What I claim is:—

1. A hood for plating tanks, comprising a member convex upwardly and resting upon the plating tank wall, said member being provided with a large top opening through which access may be had to the inside of the plating tank, removable covers for said opening, a conduit secured to the side wall of said member and communicating with the space beneath the same, and means for withdrawing the gases and fumes formed in said tank through said conduit.

2. A hood for plating tanks, comprising a sheet metal member provided with side and end walls arched upwardly and having a wide longitudinal top opening through which access may be had to the inside of the plating tank, a removable cover for said opening, and a conduit secured to the side wall of said member below said opening and communicating with the space beneath the same, whereby the fumes and gases from the plating tank may be withdrawn therefrom.

3. A hood for plating tanks, comprising a sheet metal member having side and end walls arched upwardly and toward each other and adapted to rest on the tank walls and provided with a large, wide opening in its top, the edges of said opening being parallel, a cover for said opening comprising two members each slidable along the edges of said opening, whereby either end of the tank may be opened at will, said covers being also bodily removable to expose the entire opening, and a conduit connected to said sheet metal member below said opening and through which the fumes from the plating tank may be withdrawn.

4. A hood for plating tanks, comprising a sheet metal member having side and end walls arched upwardly and inwardly and adapted to rest upon the tank walls and provided with a top opening, the side edges of said opening being parallel and projecting upwardly, a pair of covers having downwardly projecting side flanges embracing the spaced edges of said opening and adjustable therealong, said covers being also bodily removable from said hood, and stops secured to the lower surfaces of said covers and adapted to contact the end walls of the tank to limit movement of said covers.

5. A hood for plating tanks, comprising a sheet metal member open on its under side and resting upon the plating tank wall and provided with a large top opening, a closure for said opening, said closure being bodily removable to expose the entire opening, the side wall of said member being provided with an elongated longitudinally extending

opening, a funnel-shaped member secured
to the outside of said side wall and covering
said opening, and a conduit communicating
with said funnel-shaped member and
5 through which the fumes of the plating tank
may be withdrawn.

In testimony whereof, I have hereunto set
my hand.

CLARENCE EDWARD LEFFEL.

Witnesses:

H. E. WILLIAMS,

F. W. WINTER.