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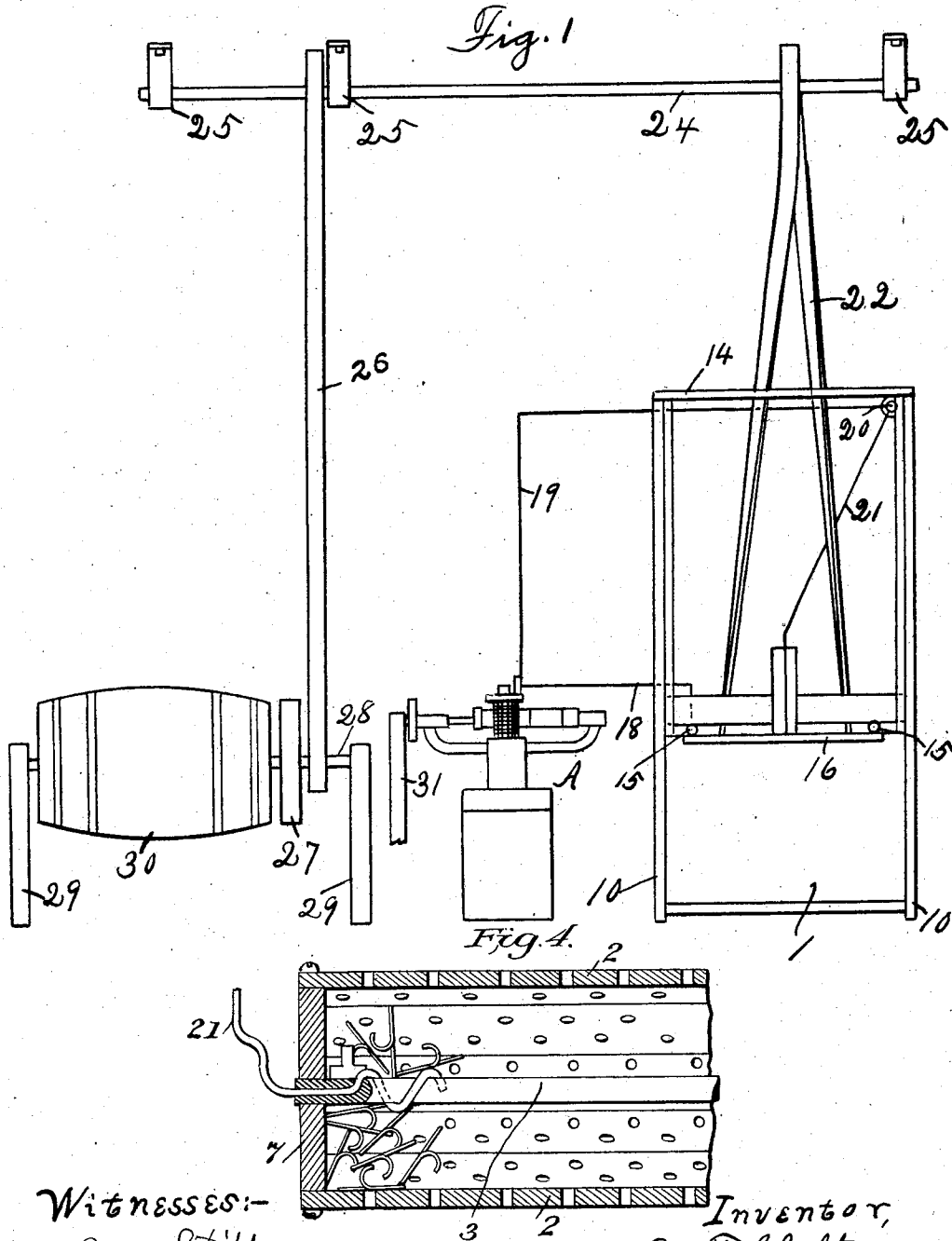
J. F. SHELTON.

APPARATUS FOR ELECTROPLATING SMALL METALLIC ARTICLES.

APPLICATION FILED SEPT. 16, 1901.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:-
J. W. Still,
A. Hosmer.

Inventor,
J. F. Shelton,
By *A. L. Jackson,*
Attorney.

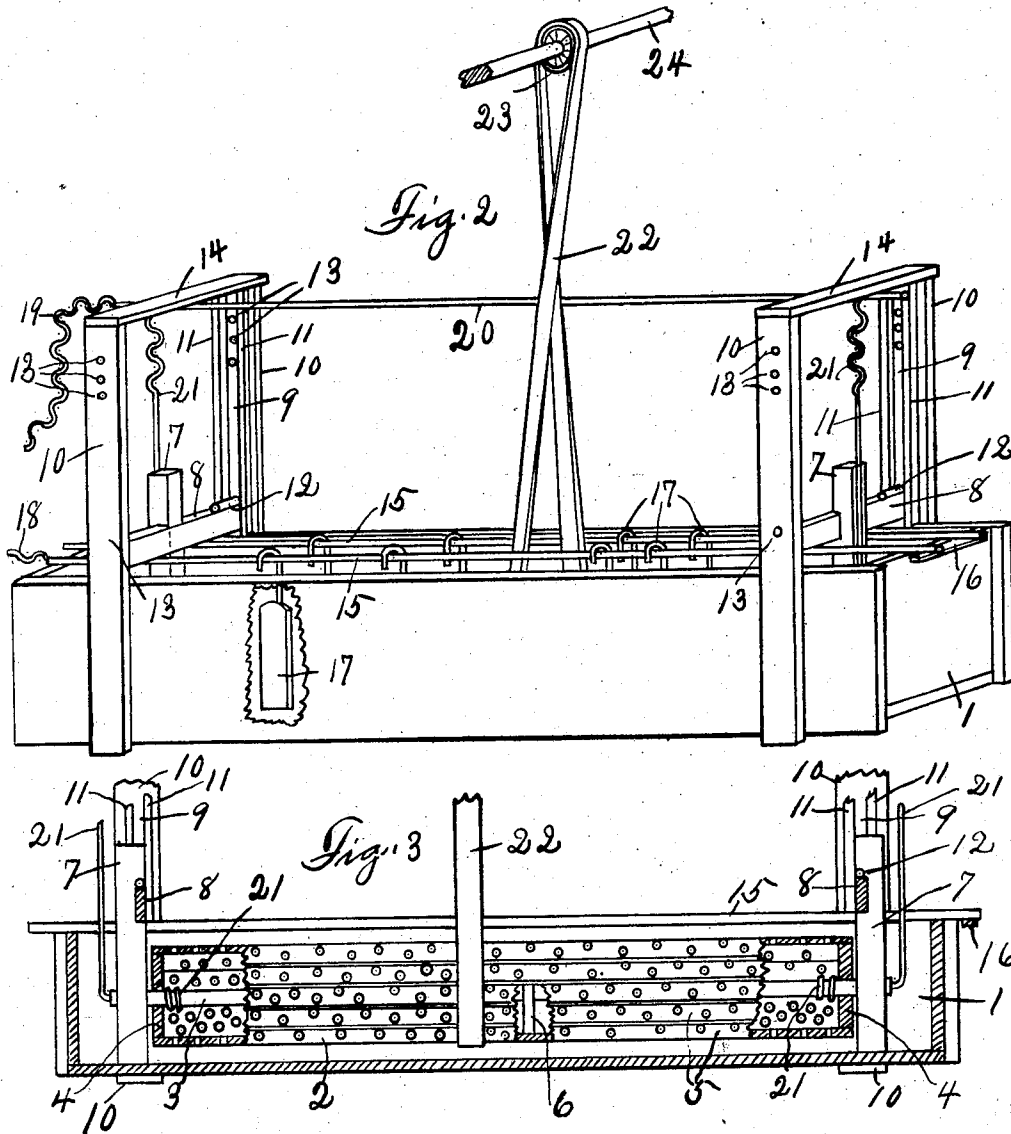
J. F. SHELTON.

APPARATUS FOR ELECTROPLATING SMALL METALLIC ARTICLES.

APPLICATION FILED SEPT. 18, 1901.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:-
J. M. Stettin
A. Hoerner

Inventor,
J. F. Shelton,
 By *A. L. Jackson,*
 Attorney.

UNITED STATES PATENT OFFICE.

JOHN F. SHELTON, OF FORT WORTH, TEXAS.

APPARATUS FOR ELECTROPLATING SMALL METALLIC ARTICLES.

SPECIFICATION forming part of Letters Patent No. 737,162, dated August 25, 1903.

Application filed September 16, 1901. Serial No. 75,460. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. SHELTON, a citizen of the United States, residing at Fort Worth, Texas, have invented certain new and useful Improvements in Apparatus for Electroplating Small Metallic Articles, of which the following is a specification.

This invention relates to apparatus for electroplating small metallic articles, and more particularly certain small clamps used in building fences.

The object of this invention is to construct apparatus for electroplating quantities or masses of small articles whereby the electroplating of such articles is made practical and much time and labor is saved.

Other objects and advantages will be fully explained in the following description, and the invention will be more particularly pointed out in the claims.

Reference is had to the accompanying drawings, which form a part of this specification and application.

Figure 1 is an end elevation of the invention, shown connected with certain driving mechanism. Fig. 2 is a perspective view of the tank or trough and other mechanism. Fig. 3 is a longitudinal vertical section of the tank or trough and a broken longitudinal vertical section of the revolving cylinder in the trough. Fig. 4 is a broken sectional view showing the manner of making electrical connection on the shaft of the revolving cylinder.

Similar characters of reference are used to indicate the same parts throughout the several views.

The electroplating process is done or carried on in the rectangular box 1, of ordinary construction to hold water or other liquids. This box or trough is filled with a solution.

A perforated cylinder 2 is mounted on and revolves on a shaft 3. The cylinder 2 and shaft 3 are made of wood. The cylinder is constructed of heads 4, to which are attached perforated wooden boards 5 by screws or other suitable means. One or more wooden disks 6 may be placed within the cylinder for the purpose of attaching the boards 5 thereto, whereby the boards are strengthened. The shaft 3 is mounted in two crosses consisting each of an upright post or bearing 7 and the board 8. The posts 7 have openings there-

through for the shaft 3, and the shaft 3 is stationary in the posts 7, the cylinder 2 revolving on the shaft 3. The boards or cross-pieces 8 are provided with guideways 9 on the uprights 10. Stops or strips 11 are attached to the uprights 10 to form the channels or guideways 9, and the boards or cross-arms 8 move up and down in these channels or guideways. The cross-arms 8 are held in position by pins 12, which are inserted in holes 13 in the uprights 10. When the cylinder 2 is down within the trough 1, the cylinder is held therein by placing the pins 12 above the cross-arms 8. When it is necessary to take the cylinder 2 out of the trough which holds a solution, raise the cylinder by means of the cross-arms 8 to the desired height and then place the pins 12 in apertures or holes 13 under the cross-arms 8. Thus the cylinder is held in or out of the acid solution by means of the cross-arms 8 and the pins 12. The uprights 10 may be attached to the sides of the trough. A cross-bar 14 is attached to the top part of each pair of uprights.

Two metallic rods 15 are mounted on top of the trough 1, and at one end of the trough the rods 15 are connected together by a metallic bar 16, so that electrical connection is made between the rods. Zinc bars or anodes 17 are suspended on the rods 15, one of these bars being shown completely in Fig. 2 through a broken place in the side of the trough 1. The rods 15 are connected to the positive pole of an electric dynamo by means of a wire 18. Connection with the negative pole of the electric dynamo is made through the wire 19, which is connected to the rod 20, the wires 21 being connected to rod 20. The wires 21 pass in the ends of the shaft 3, as shown in Fig. 4, and then out of the shaft and one or more times around the shaft, it being necessary that there be some metallic connection inside of the cylinder 2. The clamps (shown in Fig. 4) must be put in the cylinder 2 in such quantities that electrical connection will be made throughout the mass of clamps, and there must be enough clamps to come in contact with the wires 21. This will complete the circuit through the rods 15, on which are hung the zinc bars 17, the trough being filled with a chemical solution. The cylinder 2 must be constantly revolved while the clamps

are being electroplated. This is done by means of the belt 22, which runs over pulley 23, mounted on shaft 24. The revolving of the cylinder 2 causes uniform electroplating of the clamps throughout the mass of clamps. The shaft 24 is mounted in suitable hangers 25 and is driven by the belt 26. This belt is driven by the shaft 28, which is driven by the pulley 27. Pulley 27 may be driven by any suitable power. The clamps when made or formed are rough and have sharp ends and edges and must be tumbled before they are electroplated. They are placed in a tumbler 30, which is mounted on the shaft 28, so that one quantity of clamps is tumbled while another quantity is being electroplated. The shaft 28 may be mounted in suitable bearings 29. The electric dynamo A may be driven by the belt 31. The electrical connection with dynamo A has been described above. When one quantity of clamps have been sufficiently electroplated, they are taken from the cylinder 2 and the supply in the tumbler is placed in the cylinder 2 and another quantity of rough clamps are placed in the tumbler 30.

It will be understood from the above description how a mass of clamps is electroplated at one time. The continuous agitation of the clamps by revolving the cylinder 2, which is made of wood throughout and perforated, so that the solution passes freely through this cylinder, insures uniformity in electroplating each clamp.

It will be seen that the only contacts are the wires 21, the circuit being completed through the mass of articles to be electroplated, the articles themselves making contacts with each other and those near the ends of the cylinder making contact with the wires 21. The current is caused to diverge from the central part of the cylinder and is more evenly and thoroughly distributed to all parts of the cylinder by placing the anodes nearer the central part of the cylinder and trough, longitudinally considered, than the points at which electrical connection is made with the mass of articles.

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

1. An apparatus for electroplating small metallic articles in quantities comprising a trough containing a solution, anodes suspended in said solution, a frame removably mounted in said trough, a wooden shaft mounted in the lower part of said frame, a perforated wooden cylinder mounted on said shaft, means for revolving said cylinder, means for making electrical connection with said anodes, and means for making electrical connection with each end of a mass of metallic articles moving in said cylinder during the revolution of said cylinder.

2. An apparatus for electroplating small metallic articles in quantities comprising a trough containing a solution, anodes suspended in said solution, a perforated wooden cylinder mounted in said trough, a frame

having a wooden shaft on which said cylinder is mounted, means for revolving said cylinder, said cylinder being adapted to contain the mass of metallic articles and to allow the solution to pass freely therethrough, means for making electrical connection with said anodes, and means for making electrical connection with each end of the mass of articles whereby the circuit is completed through said mass of metallic articles.

3. An apparatus for electroplating quantities of small metallic articles comprising a trough containing a solution, a frame carrying a wooden shaft fixedly mounted therein removably mounted in said trough, a perforated wooden cylinder for containing the mass of metallic articles mounted on said cylinder, means for revolving said cylinder, means for connecting said anodes with the positive pole of an electric dynamo, and means for connecting the mass of metallic articles in said cylinder with the negative pole of said dynamo.

4. An apparatus for electroplating quantities of small metallic articles comprising a trough containing a chemical solution, a removable frame carrying a non-conducting shaft mounted in said trough, a perforated wooden cylinder mounted on and revoluble on said shaft for containing said articles, metallic rods resting on said trough, zinc bars suspended on said rods and in said solution, means for connecting said rods with the positive pole of an electric dynamo, and means for connecting the mass of metallic articles contained in said cylinder with the negative pole of said dynamo.

5. Apparatus for electroplating quantities of small metallic articles comprising a trough containing a solution, a perforated non-conducting cylinder for containing said articles, a removable frame suspended in said solution and carrying a non-conducting shaft on which said cylinder is mounted, means for continually revolving said cylinder on said shaft, anodes suspended in said solution, and means for making electrical connection with said anodes and with the mass of articles.

6. Apparatus for electroplating quantities of small metallic articles comprising a trough having anodes suspended in a solution therein, a perforated non-conducting cylinder for containing the masses of metallic articles, a non-conducting shaft for suspending said cylinder in said solution, means for revolving said cylinder on said shaft, means for connecting said anodes with the positive pole of an electric dynamo, and means for connecting the masses of metallic articles with the negative pole of said dynamo, said means consisting of suitable wires entering the ends of said shaft and extending to points within said cylinder and then out of and one or more times around said shaft, the metallic articles being utilized to complete the circuit throughout the mass of articles.

7. An apparatus for electroplating small metallic articles in quantities comprising a

trough containing a solution, anodes sus-
pended in said solution, means for suspend-
ing and continually agitating the mass of
articles in said solution, and means for mak-
5 ing electrical connection with said anodes
and solely with each end of the mass of me-
tallic articles, the circuit being completed
through the articles placed in said trough.

In testimony whereof I set my hand, in the
presence of two witnesses, this 3d day of Sep- 10
tember, 1901.

JNO. F. SHELTON.

Witnesses:

A. L. JACKSON,
W. C. FLY.