

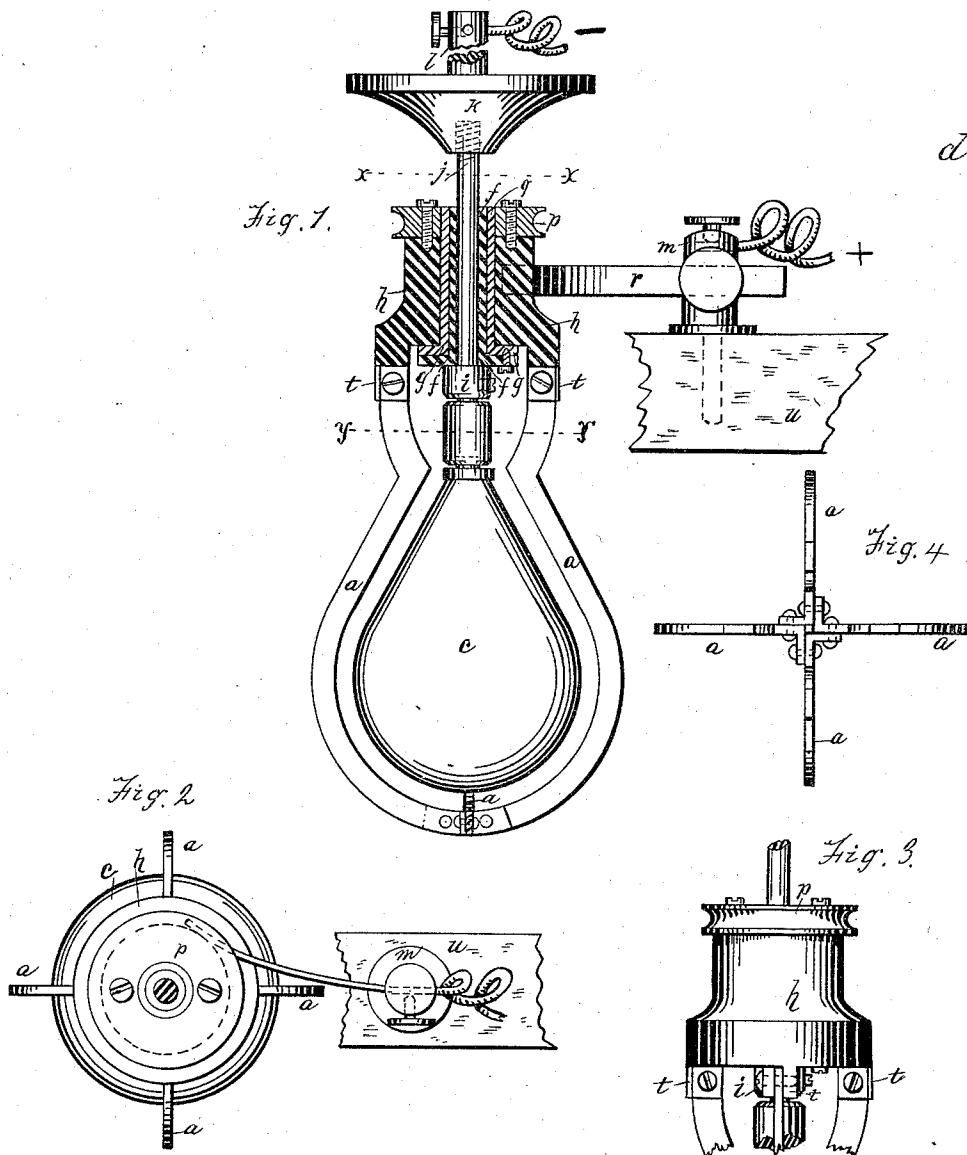
(No Model.)

H. S. ANDERSON.

MANUFACTURE OF ARTICLES BY ELECTRODEPOSIT.

No. 534,942.

Patented Feb. 26, 1895.



Witnesses
Carl Dietrich
E. B. Bartow

Inventor
Henry S. Anderson
By his Attorney Allen Webster

UNITED STATES PATENT OFFICE.

HENRY S. ANDERSON, OF SPRINGFIELD, MASSACHUSETTS.

MANUFACTURE OF ARTICLES BY ELECTRODEPOSIT.

SPECIFICATION forming part of Letters Patent No. 534,942, dated February 26, 1895.

Application filed December 18, 1889. Serial No. 334,148. (No model.)

To all whom it may concern:

Be it known that I, HENRY S. ANDERSON, a citizen of the United States, residing in Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in the Manufacture of Articles by Electrodeposit, of which the following is a specification, reference being had to the accompanying drawings and letters of reference marked thereon.

Heretofore where articles have been manufactured or plated by electro-deposit process, it has been the custom to either give motion to or revolve the cathode or allow it to remain at rest, the anode in all cases remaining stationary, and when either of the above mentioned methods have been pursued, it has been found necessary to burnish or otherwise treat the shell thus formed, in order to give it the requisite hardness and compactness, and avoid the formation of a spongy shell. The object of my invention is to overcome this objectionable feature, and also to procure a more rapid deposit; and I accomplish the object of my invention in the manner herein set forth.

In the accompanying drawings in which like letters of reference indicate like parts, is illustrated one simple form of apparatus for the carrying out of my invention, Figure 1, being a side view of my device, a part being shown in section; Fig. 2, a plan view of the device below line *x, x*; Fig. 3, a side view in full lines of the part between line *x, x*, and line *y, y*, and Fig. 4 being a plan view of the anode detached from its support.

a represents the anode; *c*, the cathode; *d*, the dynamo or other source of electricity; *p*, a pulley; *r*, a contact piece or head rubber, and *f*, insulating material; *g*, bearing collar; *h*, head or anode support; *i*, a movable collar; *j*, a supporting stem; *k*, a supporting plate; *l*, negative conducting wire connection; *m*, positive conducting wire connection and support for contact piece *r*.

The anode preferably consists of one or more strips of the requisite material bent approximately to the profile of the cathode and arranged to be revolved about the cathode a short distance from it. This I accomplish by attaching the ends of the anode to a conducting and supporting collar or part *h*, to which

is also attached a pulley, *p*, or gear to give the requisite motion.

The cathode is secured by any convenient means to a supporting stem *j*, which is preferably threaded at its upper end and is screwed into the supporting plate *k*. This plate may be supported or attached to a frame in any convenient manner.

The connection of the negative wire is preferably made by providing the plate *k* with an upwardly projecting part *l* which part is provided with a suitable binding-screw fastening the wire in place in the usual manner.

The opening through the head *h*, is made considerably larger than the diameter of the supporting stem *j* and next to this stem is fitted a cylinder *f* made of hard rubber or other insulating material, thus preventing the passing of the current through from the head *h* to the stem *j*. Outside of the insulator *f*, is fitted a cylinder or collar *g*, the opening in which is of a size to fit snugly over the insulator, and the outer diameter of which is of a size to fit within the opening in the head *h* and allow the same to revolve upon it. This cylinder or collar *g* is made of composition or hard metal which will bear the requisite wear. The pulley or gear *p*, which imparts the requisite motion, is preferably mounted as before stated, at the top of the head. From the lower portion of the head are depending arms or lugs, *t*, to which the upper ends of the anodes are secured preferably by a screw passing through a thin plate, then through the end of the anode and into the lug *t*.

The lower ends of the anodes are united preferably by having each end bent at a right angle as shown in Fig. 4, and a rivet or screw passing from each part into each adjacent part, will serve to firmly hold the parts in the desired position. The post *m* is mounted upon a suitable support *u* adjacent to the head, in such position that the contact-piece *r* will reach and bear against the head as it revolves.

It will be seen that the description herein relates to the process of electro-deposit in the manufacture of air-chambers and other like articles. It will be observed, however, that the same method of procedure may be followed in the manufacture of other products,

suitable device being provided to cause the anode or anodes to move in a direction approximately following the profile of the article to be plated or deposited upon.

5 I find moving the anode in the solution causes the giving-off of the material composing the anode to be very much more rapid than would be the case if the anode were not moving, and I find also that the burning of the
10 cathode is avoided, and that a very much stronger current may be employed when the anode is moved, and although the best results and most rapid deposit is obtained when the anode is in the circuit, yet I find that a
15 very beneficial result is produced by the moving of the anode in the solution, although not in the circuit.

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

1. The combination of a tank, a support connected to the negative pole of an electric circuit, a cathode fixed to the free end of said support, an insulated rotatable collar on the
25 fixed support of the cathode connected to the positive pole of an electric circuit, means to rotate the collar, and an anode secured to the collar, shaped to the profile of the cathode

and arranged adjacent thereto, substantially as specified.

2. The combination of the suspended cathode *c*, two or more anodes *a* conforming to the profile of the cathode, and attached at their upper ends to the supporting hanger *h*, a pulley *p* mounted upon said hanger, means to
35 cause said pulley to rotate, contact piece *r*, a source of electrical energy, and suitable conducting wires, substantially as and for the purposes stated.

3. The combination of a suitable tank, a
40 hanger *k* arranged above said tank, a supporting stem *j* secured to said hanger, a cathode *c* attached to the opposite end of the stem, four anodes *a* attached together at their lower end and secured at their upper ends to
45 the hanger *h*, means to support said hanger and means to cause the same to revolve, a contact piece *r*, suitable conducting wires and a source of electrical energy, all in combination, substantially as and for the purposes
50 stated.

HENRY S. ANDERSON.

Witnesses:

ALLEN WEBSTER,
FORREST HOSMER.