

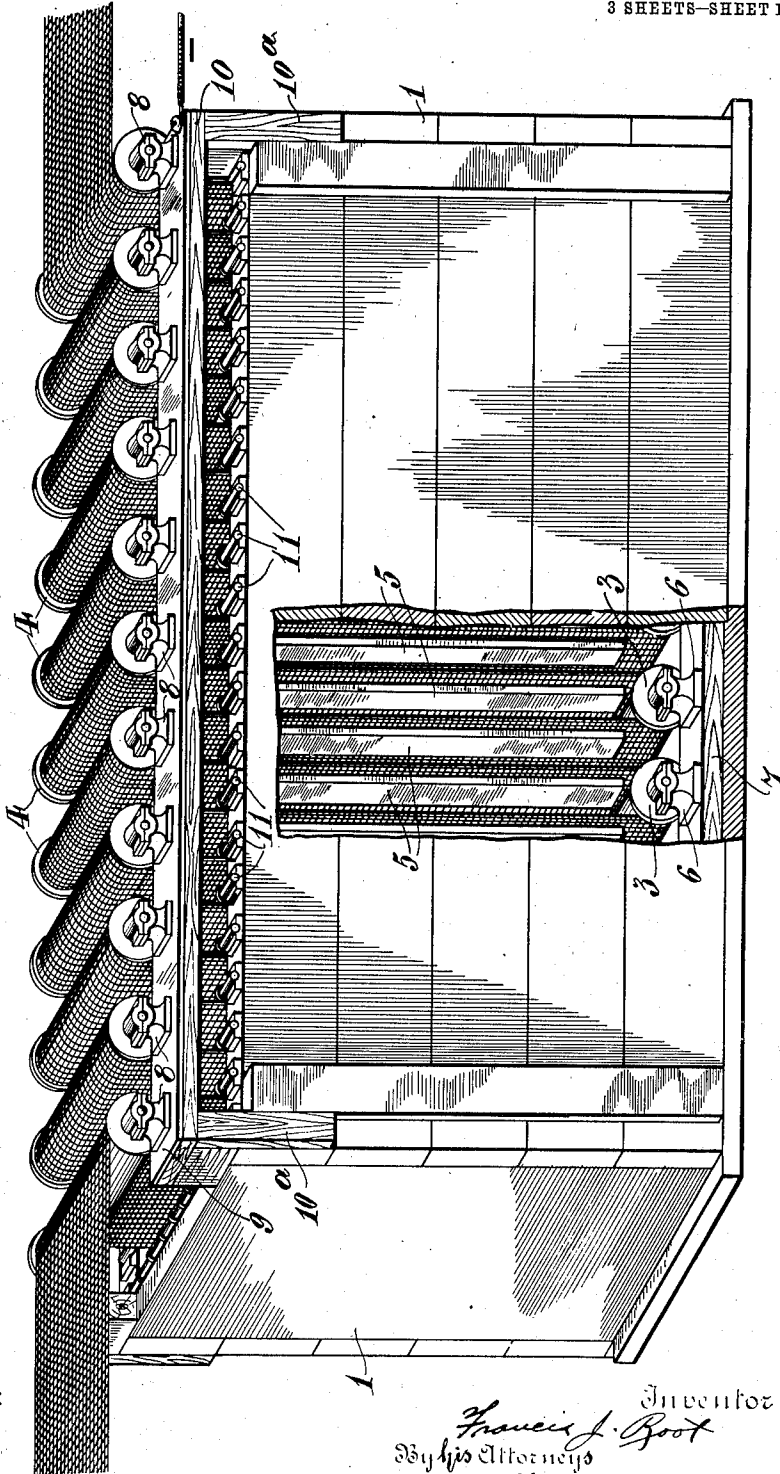
F. J. ROOT.
ELECTROPLATING OF WIRE CLOTH.
APPLICATION FILED JUNE 2, 1911.

1,003,659.

Patented Sept. 19, 1911.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
Geo. H. H. H.
Chas. H. H.

Inventor
Francis J. Root
By his Attorneys
Kidd & Wendell

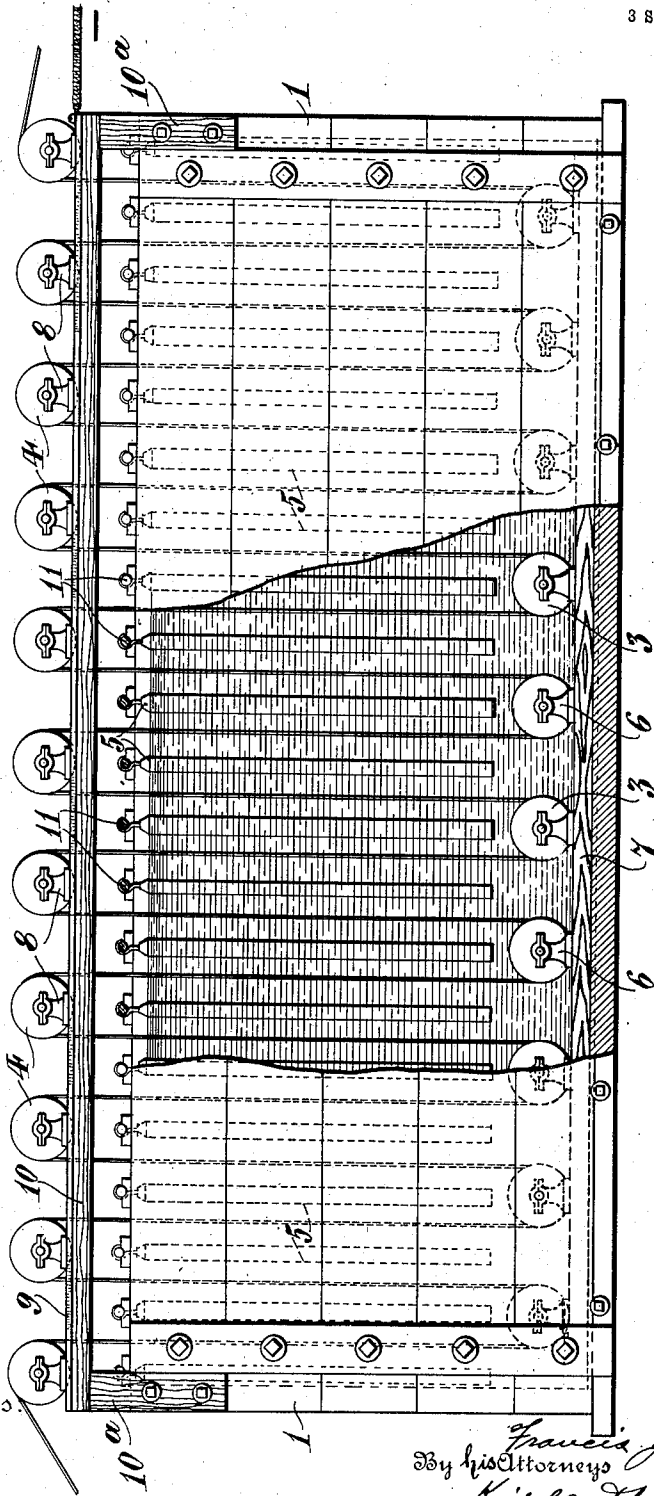
F. J. ROOT.
ELECTROPLATING OF WIRE CLOTH.
APPLICATION FILED JUNE 2, 1911.

1,003,659.

Patented Sept. 19, 1911.

3 SHEETS-SHEET 2.

Fig. 2.



Witnesses
Geo. H. H. H.
Sully H. H.

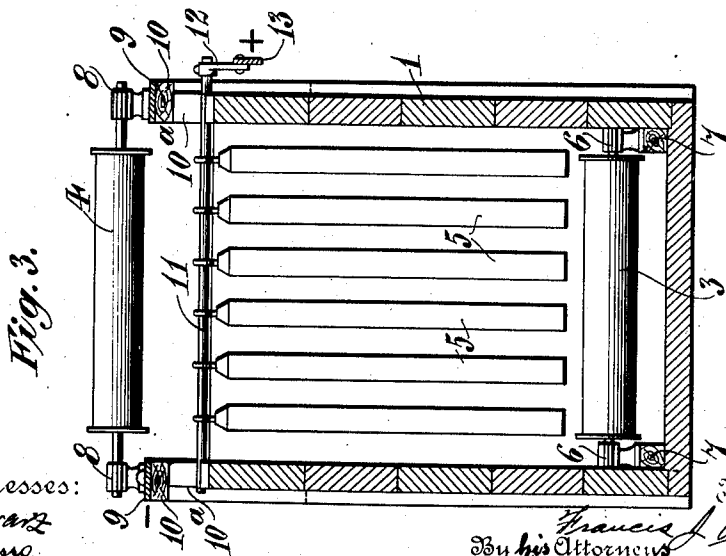
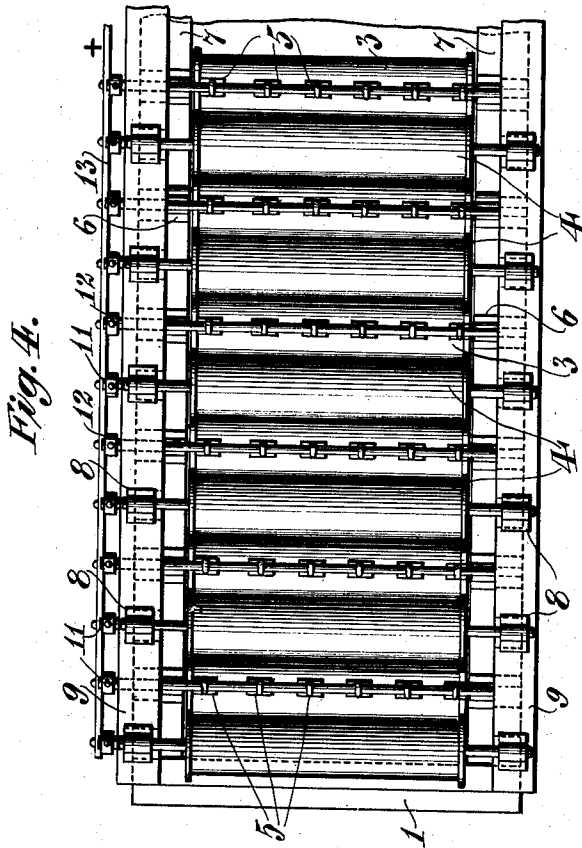
Inventor
Francis J. Root
By his Attorneys
Kiddell & Handell

F. J. ROOT.
ELECTROPLATING OF WIRE CLOTH.
APPLICATION FILED JUNE 2, 1911.

1,003,659.

Patented Sept. 19, 1911.

3 SHEETS-SHEET 3.



Witnesses:
Herfmann
Sully Juro.

Inventor
Francis J. Root
By his Attorneys
Kiddell Wendell

UNITED STATES PATENT OFFICE.

FRANCIS J. ROOT, OF NEW YORK, N. Y., ASSIGNOR TO NEW YORK WIRE CLOTH COMPANY, OF NEW YORK, N. Y., A CORPORATION OF WEST VIRGINIA.

ELECTROPLATING OF WIRE-CLOTH.

1,003,659.

Specification of Letters Patent.

Patented Sept. 19, 1911.

Application filed June 2, 1911. Serial No. 630,841.

To all whom it may concern:

Be it known that I, FRANCIS J. ROOT, a citizen of the United States, and a resident of the borough of Manhattan of the city of New York, in the county and State of New York, have invented certain new and useful Improvements in the Electroplating of Wire-Cloth, of which the following is a specification.

The invention relates to new and useful improvements in the electroplating of long pieces of wide material by a continuous process and it particularly relates to the electroplating of long strips of fabric woven of wire, ordinarily called wire cloth or netting.

As showing a specific embodiment of the invention, reference is made to the drawings forming a part of the specification and in which—

Figure 1 is a perspective view of the apparatus showing the work in position therein and a portion of the side of the tank removed. Fig. 2 is a side elevation showing the work in position and a portion of the side of the tank removed. Fig. 3 is a transverse sectional view and Fig. 4 is a partial plan view.

The tank 1 is made of wood and is watertight to hold any suitable bath or solution which may be desired during the plating process. Within the lower portion of the tank and also above the tank are rollers 3 and 4 which extend transversely thereof. The material, moved along by suitable pulling or propelling means, enters the apparatus, passes over a roller in the upper set then down into the bath under a roller of the lower set, out of the bath over another roller of the upper set and so on in vertical folds or loops through the apparatus. It will be observed that the rollers are in staggered arrangement so that those in the lower set are located below the spaces between adjacent rollers of the upper set. Directly below the rollers of the upper set and above the rollers of the lower set are the metal anodes 5 for providing the plating material.

The lower rollers 3 are supported within the tank by means of bearings 6 carried on the longitudinal members 7, and the upper rollers 4 are supported in metal bearings 8 carried on the longitudinally extending members 9 and 10 which are held in place by the uprights 10^a. Either one or both of the

members 9, see Fig. 1, may be made of a metal which will readily conduct electricity and therefore can serve as a "bus bar" or common electrical connecting means for the upper rollers or cathodes all of which are electrically connected thereto. This "bus bar" or common electrical connecting means is connected to the negative terminal of an electric circuit the positive end of which is connected to the anodes.

The anodes 5 are supported in place by and suspended from rods 11 extending transversely across the upper portion of the tank. Each of these rods is provided with a depending member 12 leading to another "bus bar" or common electrical connecting means 13 to which the positive terminal of the electrical circuit is connected. The anodes are provided with hooks to hold them in place and it is obvious that one which has been used can readily be replaced by a new one when desired. The anodes are arranged directly over the lower rolls and beneath the upper rolls and are located within the extremities of the body portion thereof. It is apparent that said anodes are between adjacent vertically extending portions of the folds or layers of the work as it passes through the apparatus thereby bringing all portions of the two broad surfaces of the work close thereto, thus enabling a uniform deposit of the coating substance upon the work to be obtained.

In coating pieces of work like wire cloth such as is used for ordinary window screening to keep out insects, this apparatus is particularly useful.

It will be observed that the work passes out of the bath each time it passes over an upper roller and this aids in breaking any bubbles of gas which may have been formed upon the work and also permits gas accumulation to pass off or dissipate into the atmosphere.

As the rollers in the upper set are all connected to an end of the electric circuit the work passing thereover will also be recharged prior to being reintroduced into the bath.

With the upper rollers or guiding means located above the bath it will be observed that the work can be readily inspected at all stages in its passage through the apparatus thereby permitting the apparatus to be operated and the process to be effected in the most advantageous manner.

All of the rollers as shown are provided with flanges to retain the work in place thereupon. The work could, however, be retained in place by other means if desired.

5 The rollers serve for guiding the work through the apparatus and also for providing means to conduct the electricity to the work at several points along its path through the apparatus. When driven they also serve
10 as means for propelling the work.

It is obvious that various changes may be made without departing from the spirit and scope of the invention.

I claim as my invention:

15 1. In the manufacturing of electroplated wire cloth the process which consists in passing in a continuous path a long strip of woven wire cloth alternately over and under upper and lower rollers and electrically depositing the plating material upon the cloth
20 while in the bath within which the lower rollers are located, the upper rollers being located above the bath whereby the portion of the cloth passing over the upper rollers
25 will be out of the bath.

2. In the manufacture of wire cloth the passing of a long wide strip of woven cloth or screening alternately in and out of a bath over lower and upper sets of guiding means
30 located respectively in and above the bath and while the work is in transit in the bath electrically depositing plating material thereupon from anodes located between the folds of the work.

35 3. In the manufacture of wire cloth the passing of a long strip of cloth through an electroplating bath in the presence of anodes composed of the plating metal located between adjacent layers of the cloth and simultaneously with the passing of the cloth
40

through the bath sending an electric current to the anodes and leading said current from the cloth at a plurality of places along the path of its travel.

4. The method which consists in bringing 45 a portion of a long strip of wire cloth into an electroplating bath in the presence of anodes composed of the plating metal in said bath and while said portion of the strip is in the bath in the presence of said anodes sending through the same an electric current over
50 an electric circuit the positive pole of which is connected to the anodes and the negative pole of which is connected to the cloth at different points along the latter. 55

5. The method which consists in the passing of a long strip of wire cloth in a continuous path through a bath having therein anodes arranged so that they are opposite to the flat surfaces of the cloth and supplying
60 an electric current which passes in at the anodes and out of the cloth at several different points along its travel.

6. In the manufacture of wire cloth the passing of a long strip of said cloth alternately 65 over and under upper and lower rollers, at least the lower ones of which are immersed in an electroplating bath, past anodes which are located between the folds of the cloth and supplying an electric current which passes
70 in through the anodes and which is conducted from those portions of the cloth which passes over the upper rollers.

This specification signed and witnessed this 18th day of May, A. D., 1911.

FRANCIS J. ROOT.

Signed in the presence of—

G. McGRANN,

EDWIN A. PACKARD.