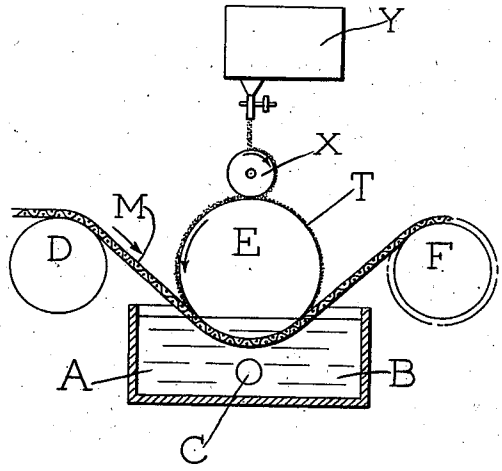
W. G. CLARK.

METHOD OF MAKING COVERING MATERIAL FOR AIRCRAFT.

APPLICATION FILED AUG. 18, 1917.

1,243,655. Patented Oct. 16, 1917.



Walter G. Clark, Inventor,

By his Attorneys,

Emery, Booth, Janney & Varney

UNITED STATES PATENT OFFICE.

WALTER G. CLARK, OF NEW YORK, N. Y.

METHOD OF MAKING COVERING MATERIAL FOR AIRCRAFT.

1,243,655. Specification of Letters Patent. Patented Oct. 16, 1917.

Application filed August 18, 1917. Serial No. 186,988.

To all whom it may concern:

Be it known that I, WALTER G. CLARK, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented an Improvement in Methods of Making Covering Material for Aircraft, of which the following is a specification.

This invention relates to covering material for aeroplanes, balloons or other air craft, or for any other purpose where a thin, light, strong and air-tight covering is necessary, and where skin friction is a consideration which makes a smooth surface highly desirable. This application is an improvement on my co-pending application, Serial No. 108,140, filed July 8, 1916.

The basis or foundation of the material consists of a web of wire mesh or net, which may be of fine wires, either steel, copper, brass, bronze or any other suitable material to which a deposit of metal applied electrically or by well-known spray methods, will adhere firmly. Upon this foundation web of netting, a continuous surface of metal is formed bridging the openings or mesh between the wires, and thus making a sheet of metal supported upon and firmly adherent to the wire web. The metal deposited electrically or otherwise, may be either copper or nickel or any other suitable metal that is capable of being formed on the web in a smooth even film, but the metals mentioned, or a combination of the two, are preferred, on account of the ease with which they may be deposited and because of the strength of the metallic film so formed.

The invention accordingly comprises the features of operation, the steps and the sequence of steps which are exemplified in the structures hereinafter described and the scope of the application of which will be indicated in the following claims.

In the accompanying diagrammatic drawing, in which is shown one of various possible embodiments of this invention, the figure is a side elevation of apparatus for depositing a layer of metal on the web.

A conducting material is applied to the drum or roller of an electroplating bath. This conducting material may be either a metallic powder or graphite, or any other suitable material which can be applied to the surface of the drum, and is a conductor of electricity. The web or wire net is then placed in or run through the electroplating bath and the entire surface is plated with the metal to be deposited. Practice has shown that .005-inch to .012-inch wire of 12-mesh to 35-mesh is suitable for this purpose.

The drawing shows a plating bath A having a suitable electrolyte B and an electrode C. The wire mesh M is run through the bath from the roll D, under the drum or roller E, to the rewinding roll F. The roller E forms the other terminal of the circuit, and a film or coating of metal is deposited on the wire mesh. Ordinarily part or all of the conducting material T on the drum adheres to the web; and the conducting material is therefore preferably of such character that it prevents the deposited metal from adhering to the drum, and that it may be readily separated from the drum and reapplied during the electroplating operation. The conducting material bridges the gaps in the mesh and forms a support for the deposition of the metal therein. The conducting material may be applied to the drum from a wiper or a felt roller X, supplied from a source of supply such as the tank or hopper and drip device indicated diagrammatically at Y.

The material may be strengthened by again passing the web through a plating bath and depositing another coating of metal on the back or reverse side opposite to that which received the first deposit; or an additional film may be deposited on both sides in this second operation, but such second operation is not essential, except where it is desired to reinforce and strengthen the surface originally produced.

The color of the surface deposit may be controlled by controlling the metal deposited, or the rate of deposition, or by depositing a combination of more than one metal, as desired.

The covering material produced by the hereindescribed method, has the advantages of being thin, strong and non-combustible. It can be produced either in continuous lengths or in continuous sheets of any reasonably desired area. The wire mesh provides a strong support which is strengthened by the material deposited, which is firmly attached to and homogeneously incorporated with the material of the wires.

In view of the above, it will be seen that

the several objects of this invention are achieved, and other advantageous results attained.

As various possible embodiments might be made of the above invention and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. The method of making sheet material, which consists in applying and incorporating a metallic surface directly upon a wire mesh or web by depositing metal upon the wires of the mesh.

2. The method of making air-tight sheet material, which comprises applying and incorporating a continuous smooth, even and unbroken metallic film upon the entire surface of a wire mesh, whereby the foundation of wire mesh has a continuous unbroken air-tight surface coating of metal adherent thereto.

3. The method of making air-tight sheet material, which comprises filling all the interstices of fine metallic wire mesh or web over its entire surface, by depositing a continuous layer of metal upon the entire surface of said web, in such manner as to cause said metallic layer to adhere closely to the wires of the web throughout its entire area.

In testimony whereof, I have signed my name to this specification this 17th day of August, 1917.

WALTER G. CLARK.