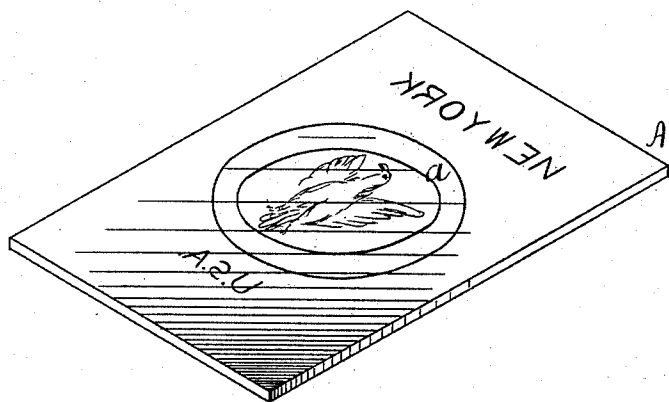


(No Model.)

J. MULLALY & L. L. BULLOCK.
SURFACE PRINTING PLATE.

No. 483,498.

Patented Sept. 27, 1892.



Witnesses:
D. W. Gardner
G. J. Miall

Inventors:
John Mullaly
Lottrop L. Bullock
By their attorney
George William Miall

UNITED STATES PATENT OFFICE.

JOHN MULLALY AND LOTHROP L. BULLOCK, OF NEW YORK, N. Y.

SURFACE-PRINTING PLATE.

SPECIFICATION forming part of Letters Patent No. 483,498, dated September 27, 1892.

Application filed February 20, 1892. Serial No. 422,308. (No model.)

To all whom it may concern:

Be it known that we, JOHN MULLALY and LOTHROP L. BULLOCK, citizens of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Surface-Printing Plates, of which the following is a description sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

Our invention relates to what is known in the art as "surface-printing," in which the design is imposed on a flat surface, and is an improvement upon the invention set forth in our concurrent application, Serial No. 352,341, filed May 19, 1890, in which we claim a printing-plate having a surface of substantially-pure aluminium, upon which a design is placed.

The object of our present invention is to render our aluminium printing-plate more close and uniform in structure when desirable, since, owing to the absorbent qualities of the substantially-pure aluminium, inequalities and variations in structure and density sometimes occur in the plates which render the surface less uniform than is desirable in certain classes of work. Our design is to improve the aluminium printing-plate in this respect without interfering objectionably with the porosity of the aluminium surface, the utilization of which renders our metallic plate practically available for use in the art of surface-printing.

We have fully demonstrated that a printing-surface of substantially-pure aluminium, when uniform and continuous in structure, is entirely practicable and successful, possessing many advantages over other printing plates and surfaces heretofore used, the only difficulty experienced being in the production of plates of uniform texture throughout, and it is the main object of our present invention to overcome this objection. This we accomplish by and our invention consists in combining with the aluminium a small proportion of denser metal—such as silver, copper, tin, or other suitable metal—which will form an alloy with the aluminium and by increasing its density reduce its porosity within certain limits. For instance, we have found

that a small percentage of silver added to the aluminium used in the preparation of the plate improves its character and insures a more perfect continuity of structure and surface, better adapted to the finer grades of surface-printing.

An incidental feature of our invention is the fact that the plate by our present invention may be graded or regulated in porosity with relation to the character of the design to be imposed thereon, a finer grade of plate being available for the more delicate designs, while plates of coarser texture are adapted to coarser designs. The percentage of the other metal added to the aluminium is very small in any case, the aluminium predominating. One or two per cent. of silver or other metal of greater density than the aluminium is sufficient to perceptibly affect and lessen the porosity of the plate, and a very slight percentage over and above that which is sufficient to produce the desired degree of density and porosity is sufficient to destroy the usefulness of the plate for surface-printing.

The drawing represents a flat-surface-printing plate A, made according to our invention, and having a design *a* imposed upon it by the usual means resorted to in the art of surface-printing.

The treatment and manipulation of the plates with the design imposed thereon may be substantially the same as set forth in our prior application for patent, hereinbefore referred to.

We do not seek to cover, broadly, a surface-printing plate formed of an alloy of aluminium and denser metal, as we are aware that a comparatively-small percentage of aluminium has been added to larger quantities of other metals for the purpose of producing a surface that would meet the requirements of surface-printing. In such cases the proportion of aluminium has been so small that the absorbent qualities of the aluminium itself were not utilized, and it was simply used to improve the homogeneity of a compound plate, in which other metals largely predominated.

It is obvious that instead of a single metal small percentages of more than one other metal may be added to the aluminium, if desired, provided the aggregate of such metals

is insufficient to destroy the porosity of the aluminium.

5 In our improved plate the aluminium predominates so largely that the plate is to all intents and purposes one of aluminium in which the porosity and density are modified by so small a proportion of other metal that the physical or chemical qualities of the latter are practically destroyed or neutralized.

10 Our improved plate contains at least ninety per cent. of aluminium, and we do not herein seek to cover an alloy containing less than that amount.

What we claim as our invention, and desire to secure by Letters Patent, is— 15

The herein-described plate for use in surface-printing, consisting of not less than ninety per cent. of aluminium alloyed with denser metal and having any suitable design imposed upon its surface, substantially as described. 20

JOHN MULLALY.

LOTHROP L. BULLOCK.

Witnesses:

GEORGE WILLIAM MIATT,

D. W. GARDNER.