

# UNITED STATES PATENT OFFICE.

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## PROCESS OF ORNAMENTING CELLULOID SURFACES.

SPECIFICATION forming part of Letters Patent No. 383,272, dated May 22, 1888.

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*To all whom it may concern:*

Be it known that I, ADOLPH BENSINGER, of Mannheim, a subject of the Grand Duke of Baden, Germany, have invented certain  
5 new and useful Improvements in the Process of Ornamenting Celluloid Surfaces; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art  
10 to which it appertains to make and use the same.

My invention has reference to a novel process of ornamenting celluloid surfaces by producing upon such surfaces designs of any desired character in colors in an indelible ink or  
15 inks; and my invention consists in first producing the desired design upon paper, or other like material, in any desired manner (but preferably by the process of printing) with a deli-  
20 ble ink or inks, and then transferring such print upon the celluloid surface in such manner as to cause said surface to be impregnated with the ink by the action of a solvent common to both the celluloid surface and the ink.

Prior to my invention indelible designs have been produced upon celluloid surfaces by printing upon the latter directly with an ink mixed with a solvent of celluloid; but in practice it was found that it was difficult to keep such inks  
30 sufficiently moist to permit of the transfer of the same from the ink-well to the inking-rollers, from the latter to the type, stamp, or stone, and from these to the celluloid surface, so as to be at all times sure of obtaining a  
35 sharply-defined design. This difficulty is due to the fact that the solvents of celluloid necessarily employed—such as carbolic acid, alcohol, or ether—evaporate very rapidly, and for the further reason that in the preparation of  
40 the ink these solvents must be used sparingly in order to give the ink the proper consistency. By my improved process this and other difficulties are avoided, as will presently appear.

I first produce the design upon paper, a textile fabric, or other like material by any ordinary or improved process, preferably with an aqueous ink—as, for instance, an aniline color mixed with water; but it will be understood that I may use other colors mixed with

other vehicles which, after the printing upon  
50 the paper, evaporate, or which leave a residual that is soluble in a solvent of pyroxyline. The design thus produced I then transfer upon the celluloid surface by first moistening said surface with any suitable solvent of the same—  
55 such as carbolic acid, alcohol, or ether, either alone or combined—and then applying the paper with its printed surface upon the celluloid and subjecting the two to pressure, as in the ordinary process of transferring prints. The  
60 solvent is preferably applied with a fine brush or sponge quite sparingly, and just sufficient to slightly attack the celluloid surface. If, then, the design in aniline ink is applied upon such surface, the ink is eagerly absorbed by the  
65 pyroxyline, is dissolved by the solvent of the latter, and forms an indelible ink intimately combined with the celluloid. Thus it will be seen that by my process the indelible ink, instead of being prepared beforehand, is produced upon the celluloid during the process  
70 of ornamentation. I am thus enabled to prepare an unlimited number of designs upon paper or any other suitable fabric, preserve the same an indefinite time, and may then transfer  
75 these designs singly and leisurely and with the certainty of obtaining invariably excellent results. The hurry and anxiety attending the former processes are thus avoided and invariably good results are insured.  
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Having now fully described my invention, I claim and desire to secure by Letters Patent—

The process of producing designs in colors upon a surface of celluloid, which consists in first producing the desired design upon paper  
85 or other like material with a suitable ink or inks, then moistening the celluloid surface with a solvent of the same and of the ink employed, and then transferring the design on the paper upon the moist celluloid surface under pressure, substantially as described.  
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In testimony whereof I signed this specification in the presence of two subscribing witnesses.

ADOLPH BENSINGER.

Witnesses:

H. LEDULE,  
A. PLÜSS.