

UNITED STATES PATENT OFFICE.

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LACQUERED REFLECTOR AND THE METHOD OF LACQUERING REFLECTORS.

1,369,467.

Specification of Letters Patent.

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No Drawing.

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To all whom it may concern:

Be it known that I, OSCAR D. PLUMMER, a citizen of the United States of America, and resident of Altoona, in the county of Blair and State of Pennsylvania, have invented a certain new and useful Improvement in Lacquered Reflectors and the Methods of Lacquering Reflectors, of which the following is a true and exact description.

My invention relates to the lacquering of reflectors for headlights and similar uses. Such reflectors are preferably silver plated and in use rapidly lose their brilliancy and effectiveness. Known lacquers as heretofore used have proved ineffective to preserve the brilliancy of such surfaces, owing both to the tendency of the lacquer to discoloration under the conditions of use and to their liability to crack.

The object of my invention is to provide a method of lacquering such surfaces which will produce a lacquer coating which will not readily or soon discolor or crack under conditions of use, and my invention consists in the method of lacquering reflectors by coating their reflecting surfaces with a solution of pyroxylin in a solvent which will evaporate entirely without leaving any discoloring matter in admixture with the pyroxylin or tending to impair its transparency and toughness, the quantity of such solvent being in such proportion to the pyroxylin that it will flow smoothly and on evaporation have a pure pyroxylin coating of approximately $\frac{1}{10000}$ of an inch in thickness. Preferably I use as a solvent a compound ester of the amyl acetate type in the proportion of approximately four and one half ounces of pyroxylin to a gallon of the compound ester, such solution being free from all adulterants such as are commonly used in lacquer solutions. My invention also consists in the lacquered reflecting surface produced by my new method.

The best results I have secured by using amyl acetate as a solvent for the pyroxylin, and good results are securable from a solution of pyroxylin in ethyl butyrate or ethyl propionate in the proportions above given, and these esters may be considered as, gen-

erally speaking, equivalents for amyl acetate though not quite so good for my purposes. The other compound esters used as solvents for pyroxylin, in the same proportions, and in the absence of any adulterants, will give a lacquer coating for headlights superior to lacquer in general use and having the durable character which characterizes my lacquer. Ketones or other solvents of pyroxylin, free from adulterants or discoloring matter, can be used in carrying out my method though not so far as I have found with results as good as where amyl acetate is used.

Experimentation has shown me that the necessary brilliancy of surface and durability in use can best be secured by a lacquer solution containing $4\frac{1}{2}$ ounces of pyroxylin to a gallon of the amyl acetate, or equivalent solvent, and that this proportion cannot be materially varied from. Thus the meritorious qualities of the lacquer coating are distinctly impaired if the pyroxylin is used in excess of 5 ounces to a gallon, or below 4 ounces.

The solvent for the pyroxylin may be a mixture of the compound esters instead of consisting of a single ester, but in all cases adulterants are to be avoided, as their presence I have found to seriously impair the qualities of the lacquer for my uses.

The pyroxylin solution may be applied to the reflector surface by pouring, dipping or brushing; in all cases the quantity used must be sufficient to permit a free flow of the solution over the polished surface and under conditions which will permit surplus solution to flow off the reflector surface. The effectiveness of the coating depends, not only on the composition, but also on its thickness and the proper thickness of coat is secured by careful adherence to the proportions specified as to the coating solution, which will result in a pyroxylin layer on the polished surface approximately $\frac{1}{10000}$ of an inch in thickness.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. The method of lacquering reflectors for

headlights and similar uses, which consists in coating the bright metal surface with a solution of pyroxylin in a compound ester of the amyl acetate class, and in which solution the pyroxylin is substantially in the proportion of four and one half ounces to a gallon of such solvent, and no other ingredients exist in the solution.

2. A reflector having a polished metal reflecting surface coated with a heat resisting lacquer consisting solely of pyroxylin flowed on the reflecting surface in solution in a compound ester of the amyl acetate class and of approximately $\frac{1}{1000}$ of an inch in thickness.

OSCAR D. PLUMMER.