

Nov. 3, 1931.

G. F. METZ

1,830,236

METHOD OF COATING

Filed Dec. 22, 1928

Fig. 1

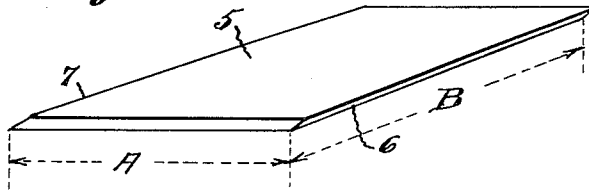


Fig. 2

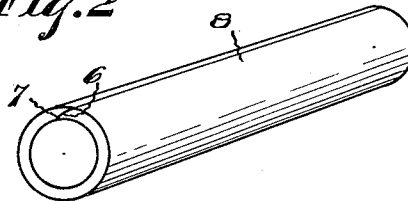


Fig. 3

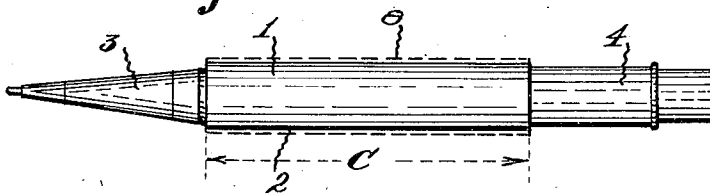


Fig. 4

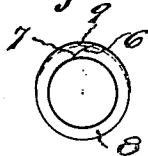
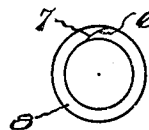


Fig. 5



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METHOD OF COATING

Application filed December 22, 1928. Serial No. 327,855.

My present invention relates to an improvement in the method of covering devices of various forms, such as pen handles, pencils of the common and automatic type, and similar articles, with an ornamental and durable coating of celluloid.

In some respects the improvement herein is analogous to my improvement in process of coating articles of manufacture as described in my co-pending United States patent application Serial No. 218,493, filed September 9, 1927.

One of the objects, aside from the creation of ornamental covering effects upon objects of general type, enumerated above, is to provide a covering upon such objects whereby to take advantage of certain shrinkages of the coating material, in instances where a single flat sheet of the covering material is utilized, as will be more fully outlined hereinafter, to enhance the fixing of the coating upon the article to which it is applied, without the use of a cement between the coating and the article being coated. This is of distinct advantage where the articles being coated are impervious to such cements or adhesives, or have no affinity therefor, thus obviating the tendency of the coating to peel from the article.

Another object is to permit of the use of cheap grades of material for forming the body of the article being coated, and thereafter giving the article a coating of firmly adhering, attractive finish.

Another object is to provide a finish which may be quickly and economically applied to such articles.

These objects and other advantages will be apprehended as the herein description proceeds, and it is obvious that modifications of the herein described method and article may be made without departing from the spirit thereof or the scope of the claims.

In the accompanying drawings:

Fig. 1 shows a sheet of coating material in perspective.

Fig. 2 is a similar view of the same in rolled form.

Fig. 3 is a longitudinal view of a characteristic pencil to which the coating may be applied.

Fig. 4 is an end view of a coating cylinder in one stage of application to a pencil.

Fig. 5 discloses said cylinder in another stage of application.

It will be understood that, while I have herein disclosed and described pencils and cylindrical devices as objects to be coated, any article may be coated whether it be of cylindrical or non-cylindrical section, such as square, hex, oval, or such form as will permit a single sheet of covering material to be self-joined or united at its edges to form an encompassing covering for the purposes herein set forth.

In Fig. 3 I have disclosed a common form of the so-called magazine pencil 1, having the main or barrel portion 2 thereof made of a phenolic condensation substance, the other portions such as the writing end 3 and the magazine and the manipulating end 4 being made of finished metal.

The barrel 1 is impervious and not affected by cements, water acids and the like. Such barrels may be made of any color scheme, usually, in the present instance, of a cheaply obtained filler, and when the article is assembled and ready for coating with an ornamental celluloid finish, the following steps are taken.

A large flat sheet of celluloid, or its equivalent, of stock dimensions, is cut into a plurality of smaller sheets 5, Fig. 1, the dimension of the width A being sufficient to roll around or enclose with edge to edge abutment the cylindrical or transverse exterior contour 2 of the desired article 1. The edges 6 and 7 are scarfed or angled, as shown, to form complementary amplified abutting faces on the cementing, joining edges of the sheet 5, this being important when thin sheet material of from .020" to .030" thickness is used.

The length B of the sheet 5 is of sufficient dimension to suit the longitudinal exterior surface of the article being coated, as at C, Fig. 3.

Having thus prepared the covering sheets as to exterior surface covering proportions, the next step is to soften the stiff sheet of

celluloid so as to make it pliable and easily bendable or conformable, without being plastic, and this is accomplished by soaking the coating sheet 5 in alcohol or a mixture of alcohol and water, in which latter case only a small amount of water is used to prevent the celluloid from becoming entirely plastic, but at the same time to make it sufficiently pliable so it may be rolled into a quill 8 as shown in Figs. 2, 4 and 5.

After softening of the sheet has been accomplished the device may be laid upon the flat softened sheet and, where the object or device to be covered is cylindrical as in Fig. 3, the sheet 5 is rolled around and about the cylindrical surface and encompasses the surface of the barrel, as indicated by the dotted lines 8, Fig. 3, and the scarfed edges 6 and 7 are touched along their scarfed faces with a suitable celluloid cement which permanently locks the quill 8 upon the barrel 2.

Owing to the softening effect of the alcohol upon the sheet 5 prior to rolling, the sheet expands slightly in all of its dimensions so that, in effect, when the sheet 5 is blanked and scarfed, as above described, due allowance must be made for the expansion by making the blank slightly smaller than is actually required, so that when rolled about the barrel 2, the scarfed edges will match perfectly as at 6 and 7, Figs. 4 and 5, and be in reasonable mechanical engagement with the surface 2.

The article thus coated is then laid aside and as the alcohol gradually evaporates from the celluloid, the celluloid becomes hardened to its original form and at the same time shrinks slightly and thereby causes the quill to become tightly wrapped about and engaged with the surface 2 of the article 1 in firm engagement therewith, so that the quill thus formed thereon cannot be normally withdrawn or removed. Thus, the shrinkage causes the quill to become firmly adhered to the surface of the article being covered.

Thereafter should there be any visual indication of inequalities of the sheet along the cemented line formed by the jointure of the edges 6 and 7, as indicated by the dotted line 9, Fig. 4, the longitudinal seam thereby formed may be polished or buffed away, thus leaving the coating without any obvious line of demarcation and substantially smooth on its exterior.

Owing to the pliability of the softened sheet, as above described, it is obvious that a large number of articles may be coated where it is possible to affix a single sheet thereabout, as herein described, and that the subsequent shrinking thereof, during drying and hardening of the softened shell, causes the sheet or shell to become firmly adhered to the body of the article or device to which it is affixed.

It is also obvious that porous or absorbent bodies may also be so covered, such as plain wooden pencils, either painted or unpainted,

and that the shrinkage of the coating thereon, after application, will cause firm adherence to the body to which the shell is so affixed without the use of any cement other than the cementing of the joints of the covering material used.

It is also obvious, by this particular means, that highly ornamental effects may be obtained in a simple and inexpensive manner, upon devices of this sort. For instance, the barrel 2 of the pencil may be of any single color, such as blue, black or brown which, of itself has no highly ornamental effect, but the covering material thereover may be transparent, translucent or in imitation of semi-transparent mother of pearl.

Thereafter, when the covering material is wrapped about the article to be covered, as herein described, the effect of the under color of the body 1, showing through the transparent, translucent or semi-transparent mother of pearl coating, greatly adds to the decorative finish thereof which finish may thereafter be highly polished and makes a very effective and attractive covering.

It will be noted that the scarfing of the meeting edges 6 and 7 of the quill forming shell 5 is substantially in the form of an overlap due to the scarfing angle and when these two edges are properly cemented together, especially on material that is extremely thin, it increases the cementing surface of the edges, as noted, and forms an overlapped seam of great strength and sufficient to resist the shrinking tension of the shell when it is dried and hardened upon the article about which it is wrapped.

What I claim is:

The method of covering parts of an article with a coating sheet, which consists in forming a sheet of celluloid, having substantially the same length as the part of the article to be covered therewith and a width substantially equal to the periphery of the said part, then softening the sheet, then wrapping the said sheet about the said part with the longitudinal elements of the sheet positioned parallel to the length of the said part, thereby causing the longitudinal edges of the sheet to meet each other in a line which is substantially parallel to the length of said part then cementing the edges of the coating sheet to each other and thereupon permitting the said coating to harden and shrink on to the said part.

Signed at Yonkers in the county of Westchester and State of New York this 21st day of December A. D. 1928.

GEORGE F. METZ.