

March 28, 1939.

M. G. SYPHER

2,152,161

INLAID ARTICLE AND METHOD OF INLAYING

Filed June 23, 1938

2 Sheets-Sheet 1

Fig. 1.

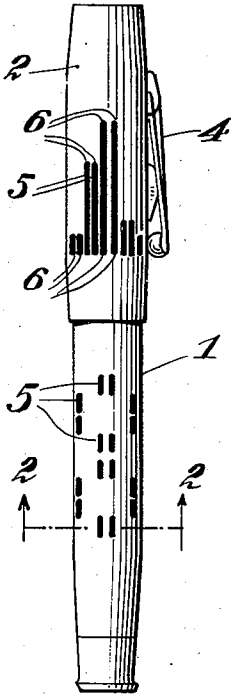


Fig. 2.

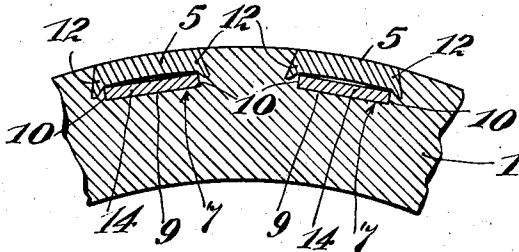


Fig. 3.

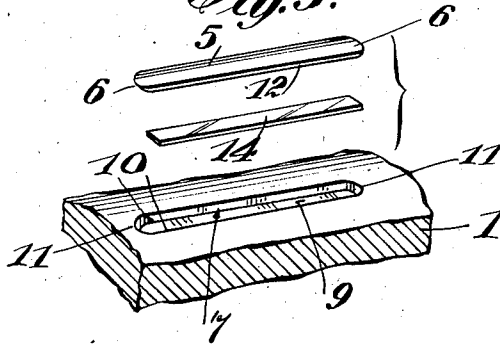


Fig. 5.

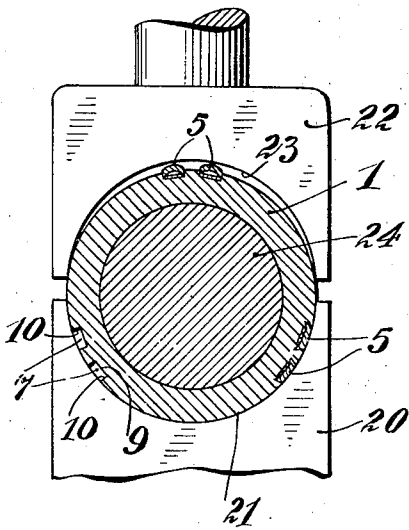


Fig. 4.

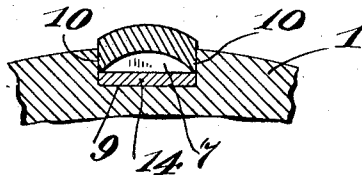
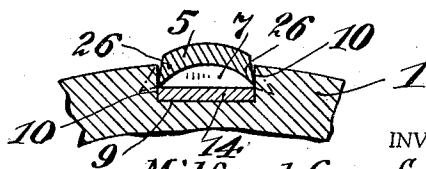


Fig. 6.



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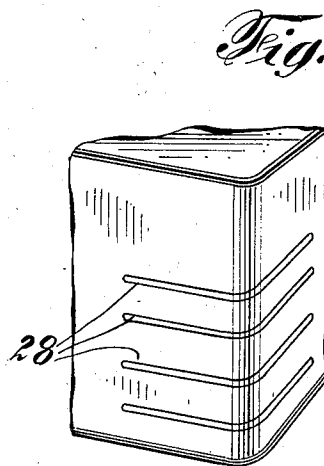
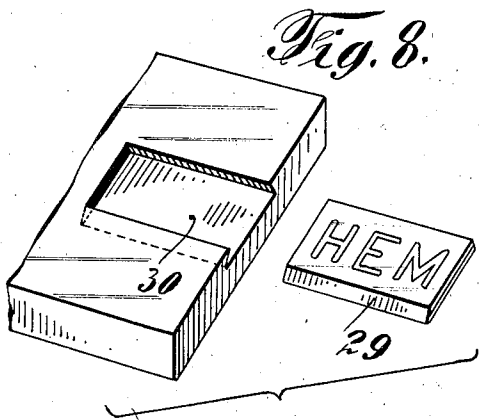
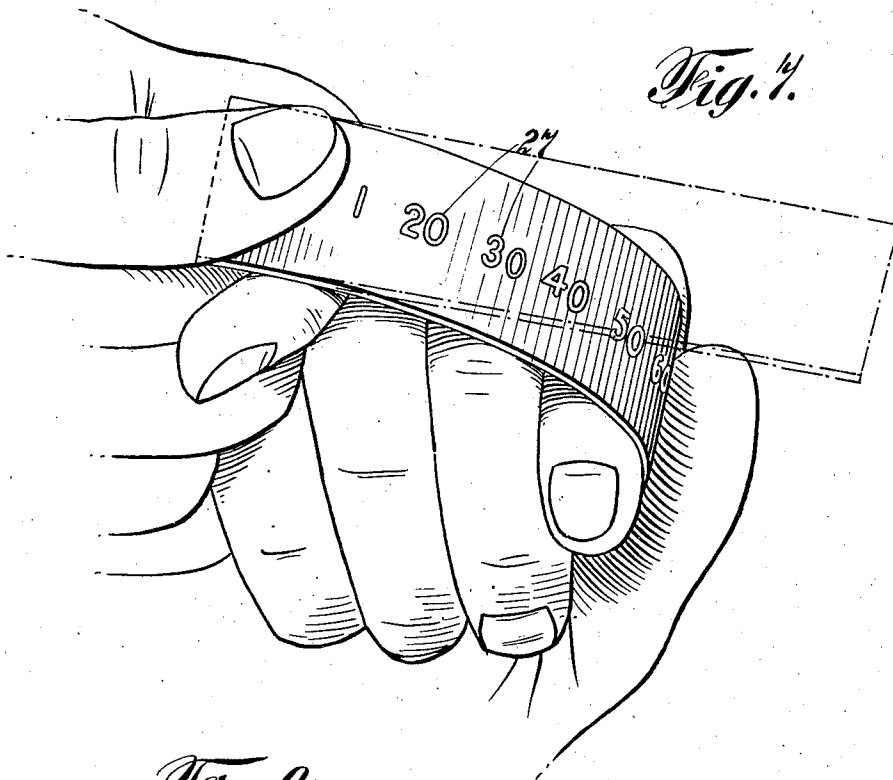
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INLAID ARTICLE AND METHOD OF INLAYING

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,152,161

INLAID ARTICLE AND METHOD OF INLAYING

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Application June 23, 1938, Serial No. 215,341

16 Claims. (Cl. 41—35)

The present invention relates to decorated articles and to a method of applying to articles decorating members of various shapes and designs.

For illustrative purposes, the invention is shown applied to fountain pens in one embodiment without any intention of limiting the inventions to said articles or to any other specific articles. At present, manufacturers of fountain pens and other articles and devices not only strive to improve their mechanical effectiveness, but also try to make them attractive in appearance. Fountain pens, for example, are made attractive by constructing them of brightly colored decorative material such as pyroxylin and the like. This mode of ornamentation is not very satisfactory, since the number of colors in which the material is available is limited. Also, brightly colored or mottled material is more expensive than material having a solid color such as black, red or blue. Another difficulty of using colors or combinations of colors for decorating articles, and particularly fountain pens, is that the individual taste of each buyer varies and, in order to please substantially everyone, the manufacturers must make their articles and devices in a very large variety of colors. Retailers and dealers have to keep a quantity of material on hand and a large selection in stock, which is quite objectionable.

The present invention aims to provide more attractive articles and devices which are ornamented with decorative metal or the like and aims to provide a simple, inexpensive method for attaching the metal to the articles. The present invention supersedes the use of expensive colored material for fountain pens, pencils and the like. In addition, the present invention is equally applicable to various other articles of manufacture, some of which will be described later as illustrative.

An object of the present invention is to provide more attractive articles of manufacture.

Another object of the invention is to provide articles of manufacture decorated with strips or other designs of precious metal.

Another object of the invention is to provide an article of manufacture having metal stampings inlaid therein.

Another object of the invention is to provide an improved method of decorating fountain pens, pencils and the like.

Another object of the invention is to provide a simple and inexpensive method of securing ornamental members to the parts of fountain pens, pencils and various other articles of manufacture.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

A preferred embodiment of the invention has been chosen for purposes of illustration and description and is shown in the accompanying drawings, forming a part of the specification, wherein

Fig. 1 is a side elevational view showing a preferred embodiment of the invention applied to a fountain pen for illustrative purposes;

Fig. 2 is an enlarged fragmentary sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary exploded perspective view showing a portion of an article and an ornamental member about to be applied;

Fig. 4 is an enlarged fragmentary sectional view showing a decorative member mounted on an article prior to being secured thereto;

Fig. 5 is a sectional view illustrating an apparatus for carrying out a preferred method of securing the decorative members;

Fig. 6 is a fragmentary sectional view showing another embodiment of the invention;

Fig. 7 is a view illustrating the invention applied to a strip of material, which may be flexed without disturbing the inlays;

Fig. 8 is a perspective view illustrating the invention applied to an insert adapted to be mounted on various articles; and

Fig. 9 is a fragmentary view illustrating the invention applied about the corner of a rectangular article such as a "Kodak".

It will be understood that the invention is applicable to all types of articles desired to be decorated. For illustrative purposes, the invention is shown in Figs. 1 and 2 applied to a fountain pen having a casing or barrel 1 and a pen point protecting cap 2 attached thereto. The cap may have a pocket clip 4 thereon or any other suitable attaching member, such as a ring, for carrying the pen on a chain. The barrel and cap may be constructed of pyroxylin, hard rubber or any other suitable material adapted to be utilized for fountain pens. Any desired color of material may be used, but black material is preferred because of its inexpensiveness and because it lends itself to decoration with metal having a silver or gold color.

As illustrated herein, the barrel and cap of the fountain pen may be provided with a plurality of ornamental members 5, shown herein as strips, 55

it being understood that any desired shape of decorating members may be utilized. The strips may extend longitudinally along the barrel and the cap and may be arranged in groups to form attractive designs. The ornamental members also may be arranged spirally or in other suitable designs. If desired, they may be provided in both the cap and the barrel or on either alone. Thin ornamental members having a thickness of about twelve-thousandths of an inch are excellent for many decorative designs. The ornamenting members are preferably arcuate or bow-shaped in section having downwardly facing edges and are adapted to be flattened to attach them to the article, as described herein. The ends 6 of the members may be rounded or triangular or any other suitable shape, which enhances the appearance thereof. The decorating members may be formed of gold, gold plated or gold filled metal, silver, chromium plated metal or any other suitable material adapted to be inlaid on the articles desired to be decorated. Metals of the above types are particularly desirable because they are bright and attractive in appearance, do not corrode or tarnish and are relatively ductile or malleable to permit them to be readily secured to the parts of the article.

While the ornamental strip may be applied to an article in any desired manner, the preferred method described below has distinct advantages in simplicity and the formation of a permanent union between the strip and the article. Preferably, elongated grooves or recesses 7 (Figs. 3 and 4) each having a bottom portion 9 and side portions 10 are formed in the surface of the article for securing the ornamental strips therein. The grooves or recesses are substantially equal in length and width to the length and width of the strips to be inserted and the ends 11 of the grooves correspond in shape to the ends 6 of the strips. The grooves are sufficiently deep to receive the arcuate strips. Prior to attaching the strips, the arcuate portions thereof may extend upwardly and outwardly from the grooves to permit them to be pressed therein so that the outer surfaces of the strips are flush with the outer surface of the pen barrel or cap. The grooves may be molded into the article in any suitable manner during the manufacture thereof and are arranged to provide the desired design or the grooves may be cut or pressed into the article after it is molded.

A preferred method of attaching the metal stampings comprises placing them in the grooves so that the arcuate upper portions thereof project upwardly above the surface of the article to which the ornamentation is to be applied, and thereafter flattening the arcuate portions by pressing or rolling the metal inwardly into the grooves. This increases the width of the strips illustrated about six to eight thousandths of an inch and forces the side edges 12 thereof against the side portions 10 of the grooves. If pyroxylin or similar material is used, which is slightly plastic, particularly before it is cured, the side edges 12 of the strips are embedded into the side portions 10 of the grooves to securely lock the strips to the ornamented part (Fig. 2). It will be noted that when the strips are pressed into their final form, they may not be entirely flat but may conform to the curvature of the surface of curved articles. Preferably, several grooves are each provided with strips and the several strips are pressed therein simultaneously. This effects a substantial saving of time and is feasible because

the strips are thin and ductile and can readily be reformed. After the metal members are secured in position, they may be polished either with a cloth or by a buffer.

A difficulty encountered in attaching the strips or other designs is that the edges 12 have a tendency to be forced into the grooves and become embedded in the bottom 9, which prevents the strips from subsequently being pressed out and increased in width. In order to prevent the edges 12 from becoming embedded in the bottom 9 of the recess, a suitable substantially flat supporting strip 14 formed of relatively rigid base metal such as brass, copper or other inexpensive sheet metal, may be placed in the bottom of each groove. The members 14 preferably are relatively thin and are equal in width and length to the width and length of the grooves and of the ornamental strips. When the ornamental strips are flattened or forced into the grooves, the downwardly facing edges 12 thereof bear against the members 14, are supported thereon, and slide outwardly and away from the side edges of the supporting members 14 to embed themselves in the side portions 10 of the grooves or securely to engage the sides of the grooves if the material is exceedingly hard. Another advantage of the supporting members 14 is that they fill a substantial portion of the groove so that thinner strips of precious metal may be utilized for decorating the article, which will decrease the cost of the artistic decoration.

The invention is particularly adapted for decorating articles made of pyroxylin or similar plastic molding compounds because the edges of the ornamental stampings can be readily embedded in the walls of the recess. In addition, plastic molding compounds, on aging and curing, have a tendency to shrink. Consequently, the recesses having the ornamental metal parts therein shrink and increase the tightness of the grip of the material on the metal.

In some cases, it may be desirable to form the recesses in the pyroxylin or other molding compound while it is uncured or green and thereafter place the strips in the recesses and permit the curing and shrinking of the pyroxylin to enhance the engagement between the metal and the molded article. While the shrinkage might be relied upon, in some cases, to effect the attachment of the metal stampings, it is preferred that it be utilized to supplement and aid another type of securing means and thereby enhance the permanency of the structure.

The present invention, as pointed out above, is not only applicable to fountain pens and the like but is also equally applicable to other types of articles of manufacture, for example, umbrella handles, vanity cases, instrument panels for cars, Kodaks, clock and watch dials, watch crystals, poker chips, scales, telephones, signs, presentation boxes, and other articles too numerous to mention.

As illustrative, the invention is shown in Fig. 7 applied to a strip of material which may be either rigid or flexible. It may be large enough to form a sign or an instrument panel in a car. A very effective decoration is obtained with such strips or plates by inlaying a translucent material and placing a light back of it. For example, an instrument panel for a car may be inlaid to give an excellent appearance during the day and a superb appearance when lighted at night. Likewise, signs for doors, hallways and the like may be similarly made. The perspective view illus-

trates the strip flexed, which is taken from an actual photograph and illustrates the effectiveness of the present method of inlaying. The numbers 27 or other inlaid parts remain in position even when the strip is flexed, as shown.

In many cases, it is desirable to personalize gifts by inlaying initials, monograms, trademarks and the like. Since each person has different initials, it requires a specific inlay for each article. Since the inlaying cannot be done by the retailer, the retailer is of course unable to deliver the initialled article at the time of purchase. In such cases, it is sometimes convenient to have an insert, as shown at 29 in Fig. 8, which may be initialled at the factory and mailed direct to the purchaser for insertion in the article. Any suitable dove-tailed slot, as shown at 30, may be utilized for holding the insert in position. If desired, an adhesive may be utilized.

The inlay, as described herein, may extend around corners, as shown in 28 in Fig. 9, where a fragment of an article such as a "Kodak" is shown. The present method lends itself to articles of various shapes and designs. The illustrations above are only a few of the many applications of the invention and are not intended to limit the invention or the scope of the claims.

While it is not desired to limit the method described herein to the use of any particular apparatus, a preferred form of apparatus is illustrated in Fig. 5 for inlaying tubular articles. Similar devices, designed for the shape and character of articles to be inlaid, may be utilized for other articles. In the illustrated embodiment, a suitable press may be utilized which comprises an anvil or lower die member 20 having an arcuate trough or channel 21 for receiving a tubular part and an upper die member 22 adapted to be moved upwardly and downwardly with respect to the lower die member 20. The upper die member 22 has an arcuate channel 23 conforming substantially to the curvature of the tubular part, which is adapted to engage the ornamental strips and press them into the tubular part. The upper die member 22 is attached to an operating mechanism (not shown) for moving it downwardly and upwardly at desired intervals. The mechanism may be operated by a treadle or the like, permitting the operator to use both hands for placing the strips into the grooves of the part to be decorated but, if desired, the press may be operated by a hand lever. In order to prevent the tubular part from being pressed out-of-round or otherwise distorted, a core or mandrel 24 may be inserted into the tubular part to fit frictionally therein. The mandrel also reinforces the tubular part so that it will not yield while the strips are being applied to insure embedding the strips into the material. Another advantage of the mandrel is that after strips are secured at one side of the tubular part, the mandrel may be rotated to bring other portions of the tubular part in position for being decorated. If the present invention is applied to an article having a flat surface, a concave or convex surface, a suitable die and anvil having corresponding flat or curved surfaces are utilized for securing the strips or other ornamental members.

In Fig. 6, another embodiment of the invention is illustrated wherein the arcuate strips 5 are provided with relatively sharp, bevelled, downwardly and outwardly tapered edges 26 adapted to bite into the side portions 10 of the grooves and be embedded therein. An advantage of this construction is that the edges of the strips are

sharper and are substantially dove-tailed into the groove, as shown in dotted lines, and are held more securely therein. This result may also be attained by providing the grooves with reentrant or dove-tailed side walls adapted to receive and retain the edges of the arcuate members.

It will be seen that the present invention provides a pleasing and attractive surface ornamentation for articles which can easily be applied by a simple and inexpensive method. Any desired color of material may be utilized for the parts, together with decorative inlaid strips of material applied thereto. Where several parts, for example, the cap and barrel of a pen, or a pen and pencil, are both decorated, the decoration may be matched. A further advantage is that the ornamentation may be applied to most any article of manufacture. The ornamental strips or designs are firmly secured and can readily withstand any rough usage to which they may be subjected and will not drop out or become loose.

As various changes may be made in the form, construction and arrangement of the parts herein without departing from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all matter herein is to be interpreted as illustrative and not in a limiting sense.

The present application is a continuation in part of my prior application, Serial No. 24,518, filed June 1, 1935.

Having thus described my invention, I claim:

1. As an article of manufacture, a fountain pen, pencil or the like comprising, in combination, a tubular part having a plurality of recesses therein, a substantially flat member in each of said recesses, and a metal strip on each of said flat members secured in said recesses.

2. An article of manufacture comprising a member formed of pyroxylin material having a plurality of grooves therein; a relatively rigid member formed of a base metal in each of said grooves, and arcuate members above each of said rigid members having a surface of precious metal, said arcuate members being mounted in said grooves, the edges of said arcuate members being embedded in portions of said pyroxylin material adjacent to said grooves to secure said arcuate members to said first mentioned member.

3. An article of manufacture comprising, in combination, a member having a groove therein, a substantially flat member in said groove, and a substantially thin member on said flat member provided with an upper surface conforming substantially to the outer surface of said first member, said thin member being secured to said first member to hold it in said groove.

4. The method of ornamenting articles, which method comprises providing a recess in an article, placing a flat member in said recess, placing a substantially arcuate member on said flat member, and increasing the width of said arcuate member by flattening it on said flat member to secure it in said recess.

5. The method of ornamenting fountain pens, pencils and the like, which method comprises providing a recess in a fountain pen, pencil, or the like, placing a substantially rigid member in said recess, placing a curved ductile member on said rigid member, and flattening said curved member to secure it in said recess, said rigid member acting as a support for flattening said curved member.

6. The method of inlaying ornamental strips

in articles to be decorated, which method comprises providing groups of grooves in a part of an article, placing flat members in said grooves, placing ornamental metal members on said flat members, and pressing said ornamental members into said grooves to embed the edges thereof into a portion of said article adjacent to said grooves.

7. The method of ornamenting tubular parts, which method comprises providing a recess on the outer surface of a tubular part, inserting a core into said tubular part, placing an arcuate member in said recess, and pressing said arcuate member radially inwardly toward said core to increase the width of said arcuate member and secure it in said recess.

8. An article of manufacture comprising a member having a recess on the outer surface thereof, a supporting member in the bottom of said recess to facilitate attachment of a decorative member in said recess, a decorative member in said recess on said supporting member, the edges of said decorative member engaging the sides of said recess to hold the decorative member in the recess.

9. As an article of manufacture, a member formed of an organic molding compound such as pyroxylin, having a recess in the surface thereof, the depth of the recess being less than the thickness of the member, a base member on the bottom of said recess, and an ornamental member in said recess on said base member having edges embedded in said first member at the sides of the recess to secure said ornamental member therein.

10. The method of ornamenting tubular members formed of an organic molding compound, which method comprises providing a recess on the outer surface of a tubular member, inserting a supporting member into said tubular member, placing a decorative member in said recess, and pressing said decorative member radially inwardly toward said supporting member to increase the width of said decorative member and secure it in said recess.

11. The method of ornamenting tubular members, which method comprises providing a recess on the outer surface of a tubular member, inserting a supporting member into said tubular member, placing a base member in the bottom of said recess, placing a decorative member in said recess on said base member, and pressing said decorative member radially inwardly toward said supporting member and against said base member to increase the width of said decorative member and secure it in said recess.

12. The method of ornamenting articles, which method comprises providing a recess in the surface of an article formed of an organic molding compound, placing a curved metal member in said recess, pressing said curved member toward the bottom of said recess to increase the width

of said curved member and to embed the edges of said curved member in the walls of said recess by displacing portions of said article at the walls of said recess to lock the decorative member therein and applying pressure to the surface of said article adjacent the sides of said recesses during the final stages of the pressing operation to maintain the surface of the article substantially smooth.

13. The method of ornamenting articles, which method comprises forming a recess in the surface of an article formed of an organic molding compound, the recess having a bottom portion and side portions substantially perpendicular with respect to the bottom portion, placing a curved metal member in said recess, the width of which is substantially equal to the width of said recess, and flattening said curved member to increase the width thereof and to embed the edges of said curved member in the side portions of said recess adjacent the bottom portion by displacing portions of the articles.

14. The method of ornamenting articles formed of an organic molding compound, which method comprises providing a recess on the surface of an article to be decorated, placing a relatively rigid member into said recess, placing a decorative member on said first member in said recess, and pressing said decorative member toward said first member to increase the width of said decorative member and cause the side edges thereof to engage the side portions of said recess.

15. The method of ornamenting articles, which method comprises forming a recess in the surface of an article formed of a material adapted to shrink upon curing, said recess having a bottom portion and side portions, force-fitting a metal member in said recess, the width of which is substantially equal to the width of said recess to cause the edges of the metal member to engage and be held in position by the sides of said recess, and curing said article and thereby causing it to shrink and enhance the engagement of said metal member with the sides of the recess.

16. The method of ornamenting articles, which method comprises providing a recess in the surface of an article formed of shrinkable material, placing a metal member in said recess, pressing said metal member against the bottom of said recess to increase the width of said member and to force the edges of said member against the walls of said recess to lock the decorating member therein, applying pressure to the surface of said article adjacent the sides of said recesses during the final stages of the pressing operation to maintain the surface of the article substantially smooth, and curing said article and causing it to shrink to enhance the engagement of the metal member with the sides of said recess.

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