(No Model.)

F. KOSKUL.

ORNAMENTAL COMPOUND METALLIC FABRIC.

No. 453,489. Patented June 2, 1891.

Fig. 4

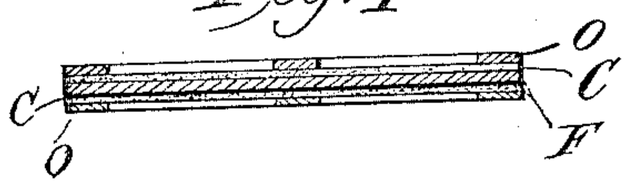


Fig. 3.

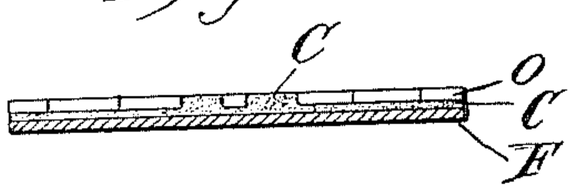


Fig. 1.

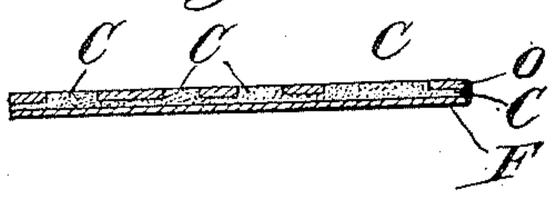


Fig. 2.

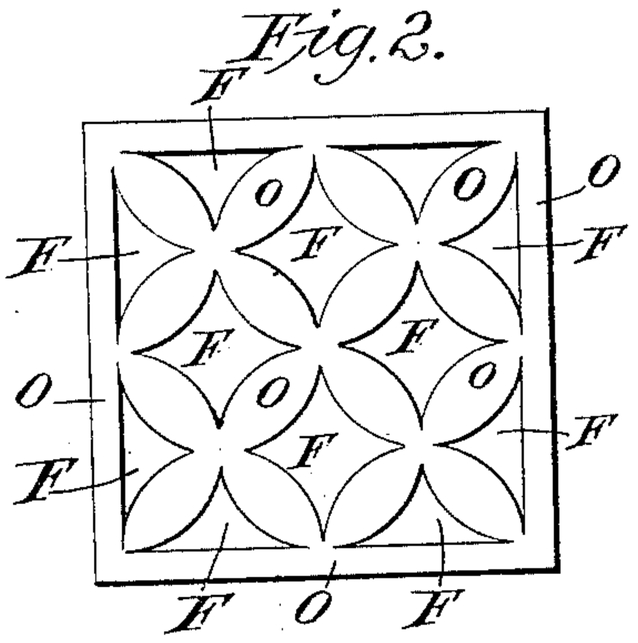


Fig. 6.

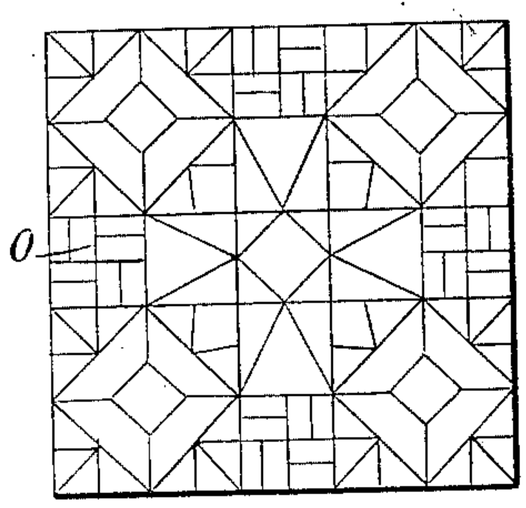
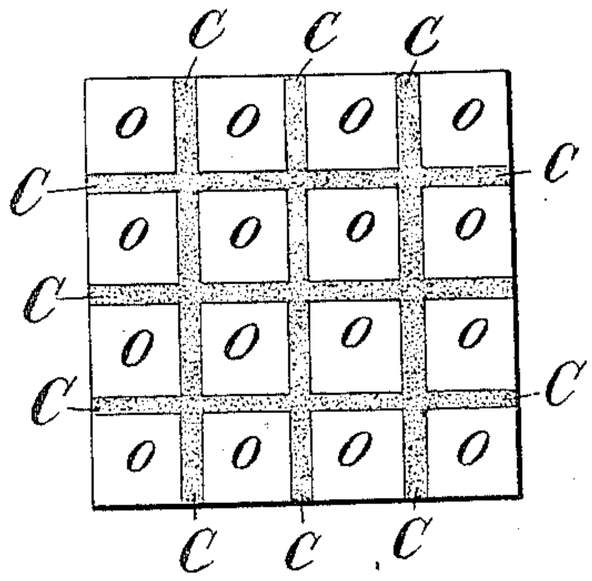


Fig. 5.



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UNITED STATES PATENT OFFICE.

FREDERICK KOSKUL, OF NEW YORK, N. Y.

ORNAMENTAL COMPOUND METALLIC FABRIC.

SPECIFICATION forming part of Letters Patent No. 453,489, dated June 2, 1891.

Application filed December 2, 1886. Serial No. 220,523. (No specimens.)

To all whom it may concern:

Be it known that I, FREDERICK KOSKUL, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Ornamental Compound Metallic Fabrics, of which the following is a specification.

My invention consists in an ornamental compound metallic fabric, as hereinafter described and specifically claimed. Said fabric is flexible throughout and is capable of being shaped for use in either flat, angular, curved, or cylindrical or semi-cylindrical form or any other artistic form, according to the requirements of the structure or uses to which it is applied, and when manufactured is light, and in use presents a beautiful or highly-finished ornamental appearance, while the amount of labor and cost thereof are slight, as will hereinafter appear.

My invention also consists in the method of producing said product, as hereinafter described and specifically claimed.

In the accompanying drawings, Figure 1 represents a cross-sectional view of my compound sheet-metal fabric in its preferable style. Fig. 2 is a face view of a compound sheet-metal fabric made in accordance with my invention and illustrating one of many ornamental designs of open, stamped, pliable, or ductile sheet-metal work that may be adopted. Fig. 3 is a sectional view illustrating the compound pliable or ductile sheet-metal fabric with one series of the ornamental openings of one of the metal sheets filled to the surface with a pliable cementing and filling composite material and the other series unfilled, those unfilled having a background of either transparent pliable cementing baking varnish or of other suitable pliable cementing-varnish rendered opaque or semi-opaque by a pigment of any desired hue or color; or this background opposite the unfilled openings may be the brilliant surface of the pliable or ductile base-metal sheet. Fig. 4 is a sectional view illustrating the compound fabric with an intermediate pliable or ductile sustaining-sheet of metal and an overlay and an underlay of pliable or ductile metal, all of its ornamental openings being represented as unfilled and with a background of pliable cementing baking-varnish or other suitable varnish, which may be transparent or rendered opaque or semi-opaque by a pigment of any desired hue or color. Fig. 5 is a face view of a compound metal fabric having a metal surface formed of divided pliable or ductile pieces, said pieces being spaced and cemented to the base-sustaining pliable or ductile metal sheet and bound together sidewise by the pliable composite cementing and ornamenting filling material, said material extending out flush with the top, sides, and ends of the compound fabric; and Fig. 6 is a face view of a compound metallic fabric having its metal surface formed of pieces of pliable or ductile metal, which, when in position upon the undivided base-sustaining pliable or ductile metal sheet, present a highly-ornamental mosaic pattern, said pieces being united together by the composite pliable cementing and filling material.

In the drawings, F, Figs. 1, 2, 3, and 4, indicates a thin sheet of pliable or ductile metal. This may be of either sheet-iron, sheet-steel, sheet-brass, sheet-tin, sheet-zinc, or sheet galvanized iron, or any other suitable pliable or ductile sheet metal. This base-sustaining sheet is preferably imperforated. At least it must be without interstices or openings through it at those points where either an ornamental brilliant metal is to be exposed or a colored background is to be applied upon it, or where the pliable composite filling and cementing material rests upon it.

O represents a pliable or ductile surface metal sheet in one piece and ornamented by having openings formed in it by stamping or cutting out of it portions of the metal, as illustrated. The configuration or design of this ornamental work may be such as taste or fancy dictate to the designer or the necessities of the case may require.

The pliable or ductile metal sheets F and O are previously to being bent or shaped solidly united to each other by a pliable adhesive cementing composite substance, preferably pliable baking-varnish, said material covering the entire upper surface of the sheet F, or as much of it as the imperforated portions of the surface-sheet require to effect a perfectly-solid union of itself with the base-sheet, and a similar pliable cement-

ing composite substance may be used to fill the ornamental openings flush with the upper or outer surface of the metal sheet O after the compound metal fabric is bent or shaped into the form desired and previously to the baking or drying of the same. This filling is illustrated in Fig. 1 of the drawings. When this filling is used, it has, preferably, comminuted or fine fragmental ornamenting substances mixed with it.

In Fig. 3 the cementing composite substance is represented as filling only a portion of the ornamental openings to a plane flush with the outer surface of the sheet or portion O. This manner of constructing the fabric gives a varied ornamental appearance to the surface sheet or portion and adds to the effect of the design.

In Fig. 4 the pliable cementing composite substance is shown as serving the purpose of a cementing medium, and also forming a depressed background flush with the under or rear side of the pliable or ductile metal sheet O, and in this illustration two layers of pliable cementing substance are shown and two pliable or ductile metal surface-sheets are represented as cemented to the sustaining pliable or ductile sheet of metal.

In Fig. 5 the sheet O is represented as formed of separate spaced pliable or ductile metal pieces and the pliable cementing composite material as placed between the side surfaces of the said metal pieces, it being also applied over the entire upper surface of the pliable or ductile base metal sheet or portion, and thus against the under surface of the said metal pieces, the same as illustrated in Fig. 1.

In Fig. 6 the pliable or ductile surface-sheet O is shown formed of ductile or pliable pieces, which are united to make a mosaic pattern, and the pliable cementing composite material is applied between the side edges and beneath the lower surface of the same, it covering the entire surface of the pliable or ductile base-sustaining sheet F and extending up flush with the outer surface of the metal sheet formed by the pliable or ductile metal pieces of the mosaic pattern.

In carrying out my invention the best or preferable mode of procedure is as follows: Take any one or a combination of the following substances and make an appropriate cementing and filling composite material which will be pliable in the operation of bending or shaping the compound metallic fabric of which it is to form a constituent element, to wit: pigment, powdered artificial or natural stone, paper-pulp, metal powder or oxides of metal, and a baking or other suitable pliable varnish as obtained in the market. The varnish is best when in a freely-flowing or of a sirup-like consistency, as it produces in this state a stiff plastic pliable mass, more or less adhesive. As small a quantity of the varnish as practicable should be used, in order to render the subsequent drying and hardening by heat or other suitable means a quick process. If the substances are introduced into the varnish in combination, they may, respectively, be dyed by suitable different coloring materials, and after a selection of these materials has been made, as the case may require, the same, singly or in combination, are, after being finely divided, introduced and thoroughly mixed with the varnish. Having prepared the plastic mass and previously united the prepared metal sheets or portions F and O by means of a simple pliable varnish, preferably a baking-varnish, having or not other substances mixed with it, such as pigments, and also having preferably first shaped the sheets by dies or other suitable means under pressure, the aforesaid conglomerate or composite cementing and filling mixture is introduced into the ornamenting openings of the sheet O until said openings are solidly filled flush with the outer surface of said metal sheet or portion O, and this done the compound fabric is subjected to heat, preferably in a japanning-oven, in order to dry or bake it hard, the temperature employed being the same as that usually adopted in the japanning process. The fabric is finally rubbed smooth and polished by any suitable means. I contemplate treating the fabric with one or more coatings of any appropriate varnish after it comes from the polisher.

In manufacturing my fabric I may introduce into the cementing composite filling material brilliant materials—such as crushed "mother-of-pearl," "flitter," "brocade," or the like—such composite cementing and filling material being set into the ornamental openings or spaces of the surface metal, sheet, or portion O; or, in fact, any desired ornamenting materials may be introduced along with the filling and cementing varnish after or before the compound fabric has been shaped, and previously to the baking or drying operation. I also contemplate using other suitable pliable adhesive cementing substances than those described between the upper or both upper and lower metal surface portions and the metal-sustaining sheet or portion, and in cases where the base-sheet F is of pliable or flexible brass or other highly-polished metal the openings of the sheet O may be left entirely unfilled, so that the brilliant metal beneath the cementing substance may be exposed to view, or, in such instances, the cement may with advantage be omitted opposite the openings; but if it is employed with such polished metal base and made to extend over the entire metal surface it must of course be transparent in order to show the brilliant metal beneath it. In cases where ductile or pliable iron is used to form the sustaining base-sheet or portion and the openings are not filled above it the pliable varnish exposed through said openings is preferably made opaque by a brilliant pigment or paint.

By the employment of pliable baking-varnish as a medium to produce a substance which is to be used as a cement between the

sheets or as a conglomerate cement and filling or inlay for the ornamental openings a great advantage over other varnishes, which may be employed for such purposes, is secured, as the same admits of soft soldering being performed when the pieces have to be adjoined, it also not being liable to shrink with age, and presenting after long use a perfectly smooth even surface, and during the baking process is capable of withstanding great heat; but while this is so I do not confine my invention to the use of baking-varnish nor to a baking or drying process with artificial heat, as other equivalent pliable cementing varnishes or cementing substances may be employed, and other drying processes may be adopted, and also as the composite filling may be applied in the configurations or to the configurated work either before or after shaping the metal of the fabric, my invention embraces both ways.

One of the greatest utilities of my compound pliable metallic fabric results from it being made of pliable or flexible or ductile sheet metal and pliable cementing substances, these metal and cementing substances admitting of the fabric being bent into curved, semi-cylindrical, cylindrical, angular, or any other desirable geometrical ornamental form without liability of having its fiber broken and the cementing substance cracked or its being injured in any way during the shaping process.

With the improved compound pliable metallic fabric may be made either ornamental tile, flower-vases, umbrella-stands, panels for either wood or metal furniture of different kinds; also, ornamental columns, cornices, and, in fact, a variety of other analogous structures, and in the use of the invention the nature of the pliable ductile or flexible sheet metal employed and the mode of shaping the metallic compound fabric will be in accordance with the circumstances and the necessities of the particular uses to which it is put.

For jewelry the compound fabric will be very useful, as the pliable, ductile, or flexible sustaining metal may be of a cheap grade, while the ornamenting open-work surface metal on one or both surfaces of the fabric may be of a costly nature, and the whole wrought previously to the baking or drying and before or after filling its interstices with composite material into the most beautiful shapes, either curved or angular.

What I claim as my invention is—

1. The within-described new article of manufacture, to wit: a compound pliable metallic fabric consisting of an ornamental pliable metallic surface portion, an undivided pliable sustaining metal portion, a composite cementing and filling portion and an adhesive cementing substance between one of the broad sides of the metal-sustaining portion and the metal-surface portion, and the whole united as one solid mass, and when thus united the filling and cementing substance being exposed to view through the said metal-surface portion, substantially as described.

2. The method herein described of producing the compound ornamental pliable metallic fabric, the same consisting in overlaying a pliable sustaining metal sheet with pliable sheet metal presenting ornamental configurations or configurated work, and applying between the sheets a pliable cement, filling the openings or spaces of the surface sheet or sheets with a composite cementing and filling substance, uniting and shaping the metal sheets thus cemented together by suitable means, and drying or baking the united mass, substantially as described.

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