Dec. 16, 1952 F. C. HENDERSON 2,621,591

STAMPING MEANS

Filed Jan. 26, 1950 2 SHEETS—SHEET 1

Fig. 2

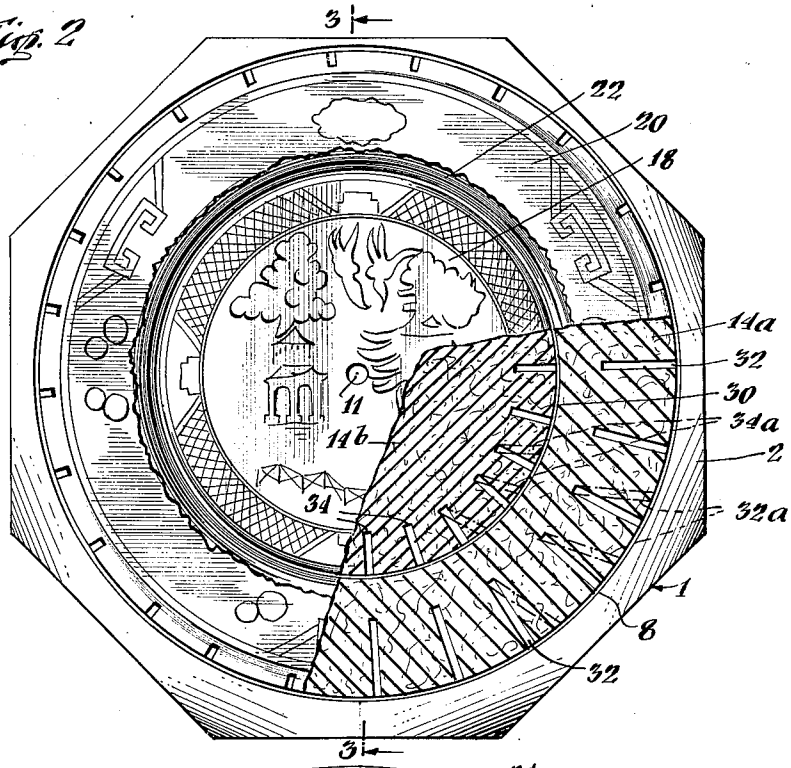
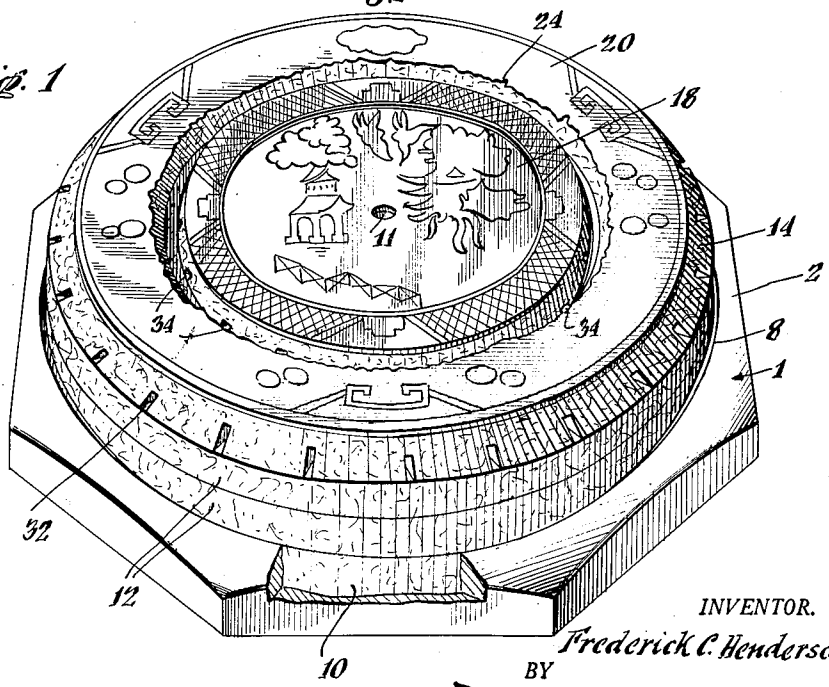


Fig. 1



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Fig. 3

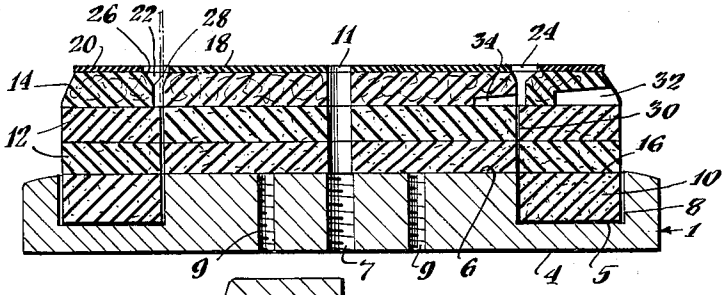


Fig. 4

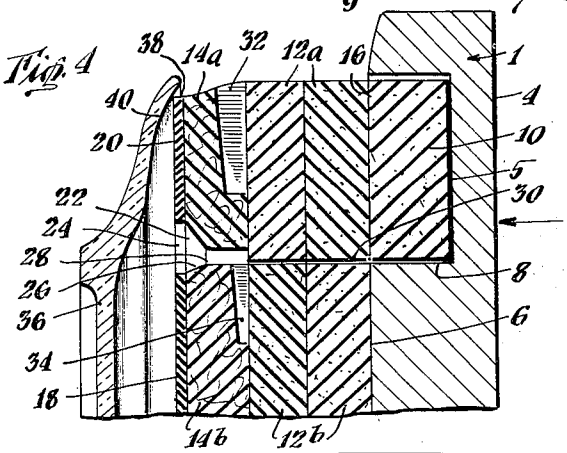


Fig. 5

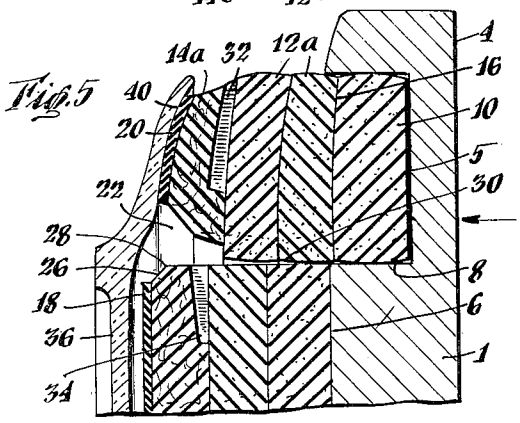


Fig. 6

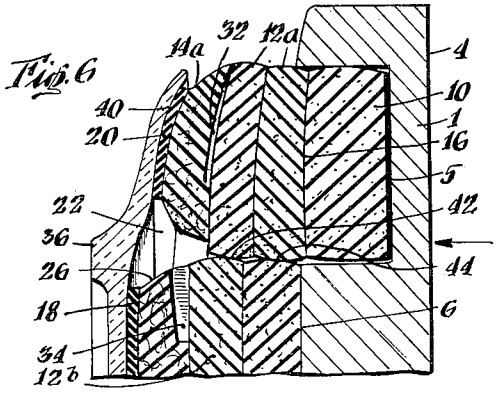
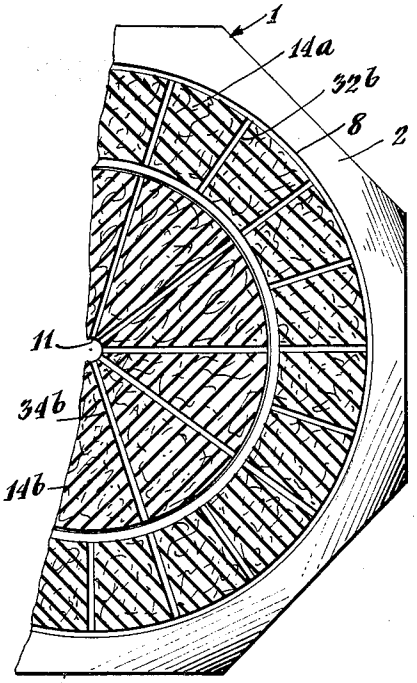


Fig. 7



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STAMPING MEANS

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9 Claims. (Cl. 101—379)

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The present invention relates to stamping means and more particularly to a stamp which may be utilized for impressing designs on table ware such as dishes.

For decorative purposes it is frequently desirable to apply or impress a design on table ware such as saucers, dishes, platters, etc. These designs are usually provided by applying colored inks or other suitable media to desired surface areas of the ware, the materials being "printed" on by stamps.

The application of a decorative design to both the rim areas and central areas of ware has presented numerous difficulties. For example, it is difficult to avoid blurring of a design while it is being applied by a samp. Moreover, the ware usually has sloping or concave rim portions and relatively flat center portions, making more pronounced the difficulty of forming readily clear, unblurred designs. Impressing the decoration on the rims and the centers of the ware in separate operations is wasteful of time and money because of the duplication involved. It has been attempted to overcome such and other difficulties by utilizing a stamp with a nonplanar face for printing both side and central portions of the ware in a single stamping operation, but this also is objectionable. For example, the surface of such a stamp must be very carefully configurated to correspond with the concavity or angulation of the surface to be decorated, which is tedious and costly; if the ware should vary slightly in angularity at rim portions so as not to correspond exactly with the angularity of the stamp, the stamp will fail to produce a clearly defined design, but instead will tend to slide laterally at portions and smudge or smear the design. In addition, it is very difficult to apply ink or other coloring media uniformly to the printing surface of the nonplanar stamp, and uneven distribution on the printing surface results in a non-uniform printed design of varying degrees of sharpness and clarity on the china or dishware. Moreover, unless the stamp contacts the ware to be impressed over its entire surface area simultaneously, portions of the stamp tend to slip along the surface of the ware at one or two points until contact is complete on all sides, resulting in smearing and blurring of the design.

The present invention aims to overcome or minimize the above and other difficulties by providing a new and improved stamping means which may be used to decorate side and center portions of table ware in one operation, and which reduces to a minimum the likelihood of

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smudging or blurring the ware during the stamping operation. The invention further contemplates the provision of a stamp with a planar printing face that facilitates more uniform distribution or application of ink or other printing media thereto; as a result, designs impressed on ware are sharp and uniform in texture.

An object of the present invention is to provide a new and improved stamping means adapted for use in applying decorations to nonplanar surfaces of wares;

Another object of the invention is to provide a new and improved stamp adapted to form more clearly defined and more accurate designs on ware.

Another object of the invention is to provide a yieldable or resilient stamp with separately compressible printing faces which may be used to impress a decorative design on the marginal and center portions of ware with minimum or no smudging or blurring.

Another object of the invention is to provide a stamp capable of forming well-defined designs on a planar portion and an angular portion of an article in a single stamping operation.

Still another object of the present invention is to provide a new and improved yieldable or resilient stamp with a planar face to which ink or other printing media may be applied relatively uniformly so that a clearly defined design may be impressed on ware by the stamp.

A still further object of the invention is to provide a novel method of making the present stamping means or device.

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 perspective view of a stamping device embodying the invention, partly broken away for purposes of illustration;

Fig. 2 is a top view of the stamping means shown in Fig. 1, with a portion broken away to disclose more clearly various features;

Fig. 3 is a sectional view taken along line 3—3 of Fig. 2;

Fig. 4 is an enlarged fragmentary sectional

view showing the stamping means just prior to contacting a dish;

Fig. 5 is a sectional view showing the stamp of Fig. 4 in contact with a rim portion of a dish;

Fig. 6 is a sectional view showing the stamp of Fig. 4 in contact with a rim portion and an inner portion of a dish; and

Fig. 7 is a fragmentary plan view showing a slightly modified form of the invention.

Referring again to the drawings and more particularly to Figs. 1, 2 and 3 there is shown a base member 1 carrying a yieldable cushion to the outermost face of which is secured an outwardly facing design forming surface. The backer or base member 1 may be wood, aluminum, plastic or any other suitable material, the backing means preferably being rigid so as to firmly support a yieldable or resilient "face." The underside 4 of said base member may be planar and provided with means such as screw holes 7 and 9 by which the member can be adjustably mounted on a ware-stamping machine. The front or top side 2 of the base member is preferably provided with an annular recess or groove 8 adapted to receive an annular portion of resilient or yieldable material 10. The base member may be formed from a single piece of material or may be built up in any suitable manner.

A soft, readily compressible material such as foam rubber is preferably used for annular band 10 and it may be secured in the recess or groove 8 by rubber cement or some other suitable adhesive 5 at its undersurface. An additional thickness or layers 12 of similar resilient yieldable material may be adhered to the top 6 of the base member 1, inwardly of the groove 8, and to the upper surface 16 of the resilient band 10; where a plurality of separate layers are used they are adhered one to the other. Two such layers are shown provided in the preferred embodiment; although the construction disclosed thus far has dealt only with built-up layers of resilient material it is to be understood that a similar resilient or yieldable "cushion" could be formed from a single thickness or layer of said material. The layers or thickness 12 are preferably applied so as to extend entirely across the base member 1, the line of division or separation 30 between them being subsequently provided, as will be hereinafter brought out.

Adhered to and supported by the uppermost of said resilient layers 12, there is shown a layer 14 of less easily compressible resilient material such as sponge rubber. Side portions of the layer 14 are preferably cut away or narrowed toward the material which receives ink and which prints a design during usage. In the drawings these printing faces are shown of some suitable semi-hard design rubber and are mounted on top of the sponge rubber layer 14 by adhesive. Referring to Figs. 1 and 2, it will be seen that the portions which actually print or impress a design comprise two parts (18 and 20) which are independently mounted on the supporting resilient or yieldable cushion; an inner portion 18 impresses designs on inner or central portions of the ware to be decorated and an outer annular portion 20 stamps the rims or sides of the articles to be decorated. When adhered to layer 14 they are separated by a lateral space 24. Either or both of the design-forming portions 18 and 20 may be formed and applied as a unit or in suitable sections.

As thus far described the stamp comprises a substantially planar outermost printing surface with a separate printing face 20 for the rims and a separate printing face 18 for the centers of the ware to be impressed. The printing faces are mounted on layers of compressible material and hence may be pressed toward the backing member 1.

It is very desirable that the portions of the printing face be individually compressible when the surfaces to be impressed are nonplanar. This desirable result has been achieved in the present invention by providing an annularly extending slit or recess in the supporting resilient layers of the stamp.

The rim printing portion 18 and center printing portion 20 are separate from each other. A recess 22 formed in the uppermost supporting layer 14 extends below printing surfaces 18 and 20 and annularly between them. Side portion 26 is shown sloping downwardly from the inner periphery of printing surface 20, becoming about vertical at location 28 so that the recess is wider at the top of layer 14 than at its bottom. A narrow annular slit 30 extends from the lower part of the recess 22 through the underlying layers 10 and 12, but if desired it may extend only partly through said layers.

The recess 22 and the slit 30 may be made by a sharp knife or by other suitable cutting means after the design-carrying rubber 18 and 20 is applied, so that the yieldable layers supporting the center stamping surface 18 are severed from the yieldable layers supporting the rim stamping surface 20. Since there is a narrow or "knife edge" slit between the adjacent side wall portions, they tend to mutually support each other. The annular rim stamping portion, for example, is buttressed or supported in its circular shape due to the fact that supporting layers 12*a* and 14*a* are held against objectionable lateral movement by the supporting layers 12*b* and 14*b* of center stamping portion 18. Even though they are mutually supporting either of the two stamping surfaces 18 and 20 may be moved to compress its cushion independently of the other.

The annular groove 8 in the backing member and which contains the annular band 10 of yieldable material such as foam rubber is aligned with the rim printing face 20; said printing face is thus supported by a greater thickness of yieldable or compressible material than is the center printing face 18. This greater thickness of yieldable or compressible material in its supporting layers gives to rim printing face 20 an amount of compressibility, which greatly facilitates stamping angular or rim portions of ware having such portions "offset" with respect to other portions thereof.

As disclosed previously, resilient layer 14 is preferably not as soft or yielding as underlying resilient layers 12; it is preferably composed of material such as sponge rubber while the underlying thickness is preferably composed of material such as foam rubber. The somewhat less resilient or yieldable material in layer 14 directly supports the printing surfaces 18 and 20 and, while it should be sufficiently yieldable to allow conformation of the design-forming areas 18 and 20 to the surfaces of ware, it must yet be amply firm to resist deflection which might cause a smudged or smeared design.

To facilitate the compressibility of sponge rubber layer 14, a series of generally radially extending recesses or grooves 32 is provided spaced circumferentially about the outer periphery of layer portion 14*a* which supports the rim stamping por-

tion 20 of the stamp face (Fig. 2). A similar series of smaller generally radially extending recesses or grooves 34 is also provided spaced circumferentially about the outer periphery of layer portion 14b which supports the center stamping portion 18 of the stamp face. These recesses or grooves 32 and 34 may be formed in the layer portions 14a and 14b by a small knife or other cutting means after the entire stamp has been assembled. Layer portion 14a is preferably held in compression while grooves 34 are formed in the side of layer portion 14b. An alternative method of manufacture is first to sever the resilient layer 14 into layer portions 14a and 14b and thereafter form the radially extending grooves 32 and 34 in their outer peripheries before said resilient layer 14 is adhered to the underlying resilient layer 12. Under still another method the recesses 32 and 34 may be provided in a disc-like piece of sponge rubber, having an external diameter equal to the other layers 12, prior to the sponge rubber thickness being adhered to a lower foam rubber layer 12.

Although the grooves or recesses 32 and 34 in supporting layer 14 have been described heretofore as generally radially extending, they may be disposed obliquely. Fig. 2 shows one of the possible variations, wherein grooves 32a and 34a, shown in dot-dash, extend obliquely across layer portions 14a and 14b, respectively. Fig. 7 shows a modified method of providing the grooves. In this latter embodiment the grooves 32b and 34b extend inwardly all the way across the surfaces of layer portions 14a and 14b, respectively, instead of extending inwardly only part of the way, as in the preferred embodiment.

In Figs. 1–3 a recess 11 is shown extending through the printing surface 18 and the resilient layers supporting it. This may accommodate a stamp holding plunger of an automatic stamping machine.

In the decorating operation, the stamp face is first "inked" by rollers or other suitable means. Where inking rollers are employed they preferably pass over the stamp face first in one direction and then in an opposite direction so as to achieve a uniform distribution of ink or other coloring medium. The substantially planar face of the stamp allows a smooth, even distribution of ink across it.

As a stamp and dish come together (Fig. 4) the stamp rim printing areas 20 are aligned with the dish rim and the stamp center printing area and the central portion of a dish 36 are aligned with each other. Shortly thereafter the dish rim is contacted initially by outer edge 38 of the rim printing portion 20. The resilient layers 10, 12 and 14 compress upon further movement together, allowing the printing surface 18 to conform to the shape of the concave dish surface 40. In Fig. 5 the rim of the dish 36 is shown in full contact with the rim stamping portion 18. It will be noted that the stamping portion has increased its diameter somewhat due to the way in which it spreads or rolls onto the rim of the dish and that the recess 22 is somewhat enlarged. The center stamping portion 18 however still maintains a planar face.

The dish is depicted in complete contact with the rim printing and the center printing stamp faces in Fig. 6. Both printing surfaces conform accurately to the angulate configuration of the inner surface of the dish. It can be seen in this figure how the radial recesses or grooves 32 and 34 facilitate the compression of layer portions 14a and 14b. It is believed that during stamping or imprinting of ware the compressed material of layer portion 14a fills almost completely the radial recess 32, while the compressed material of layer 14b fills to a lesser extent the radial recesses 34. Smearing or blurring of the designs impressed because of excessive flexibility in the printing surfaces is minimized by the manner in which the resilient layer portions 12a and 14a are stabilized by resilient layer portions 12b and 14b. As said layer portions are compressed, they tend to expand laterally, filling the slit 30 and pressing one against the other, as at points 42 and 44. As a result, the stamping surfaces 18 and 20 which are supported by said layer portions tend to be maintained in a fixed lateral relationship one to the other. There is no objectionable tendency for either of the said stamp surfaces to "creep" or become distorted after prolonged use, resulting for example in a perfectly printed dish center, but a rim printed off center.

As the dish is retracted the processes just described occur in inverse order. The stamp faces roll away from the dish surface without any slipping or smearing. The resulting prints are sharp, clear and in perfect self alignment.

Although the present invention has been discussed chiefly in connection with decoration of ware such as dishes, platters, saucers, etc., it may also be used for impressing designs on other articles with nonplanar surfaces. The stamp need not be annular in form but may be of an irregular outline so as to conform to the shape of the particular ware to be decorated.

It will be seen that the present invention provides a new and improved stamp and method of making which forms sharp, clearly defined designs on the nonplanar or different elevation surfaces of dishes and other wares, without objectionable smudging or blurring. It prints designs on the marginal and center portions of wares quickly and accurately in a single operation. The planar face of the stamp insures even distribution of ink on its stamping surfaces so that the resulting prints are of a uniform color and texture. The invention is relatively simple and inexpensive to make and may be easily mounted on a ware stamping machine. It is of a rugged construction fully capable of withstanding the rough usage to which it may be subjected.

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.

Having thus described my invention, I claim:

1. A stamping device for use in applying decorations to dishes and the like comprising a rigid backing structure, a thickness of compressible material secured to said rigid backing structure carrying a rim-decorating surface, an additional thickness of compressible material secured to said rigid backing structure carrying a center-decorating surface separated from said rim-decorating surface, said thicknesses of material having adjoining side wall portions in abutting relationship with each other whereby one of said thicknesses of material tends to restrain the other against lateral movement.

2. A stamping device of the class described comprising, backing means, a layer of yieldable material carried by said backing means, a layer

of yieldable material carried by said backing means having a side wall portion substantially abutting against a side wall portion of said first mentioned layer of yieldable material, whereby one of said layers of yieldable material tends to support the other of said layers of material against lateral movement, and separate layers of design-forming material carried by said layers of yieldable material.

3. A stamping device of the class described comprising, rigid backing means, a layer of yieldable material carried by said backing means adjacent outer portions thereof, an additional layer of yieldable material carried by said backing means inwardly of said outer portions having an outwardly disposed side wall portion substantially abutting against an inwardly disposed side wall portion of said first mentioned layer of yieldable material, whereby one of said layers of yieldable material tends to support the other of said layers of material against lateral movement, and separate layers of design-forming material carried by said layers of yieldable material having outermost faces thereof lying in substantially the same plane.

4. A device as claimed in claim 3, in which said first mentioned layer of material is provided with a plurality of spaced and generally radially extending recesses beneath its layer of design-forming material.

5. A stamping device of the class described comprising, a rigid backing member, an outwardly disposed layer of yieldable material carried by and extending around marginal portions of said backing member, an additional layer of yieldable material carried by said rigid backing member interiorly of said outwardly disposed layer of yieldable material having an outwardly facing side wall portion substantially abutting against an inwardly facing side wall portion of said outwardly disposed layer of yieldable material, whereby said additional layer of yieldable material tends to support said outwardly disposed layer of material against lateral movement, and separate layers of design-forming material carried by each of said layers of yieldable material having outermost faces thereof lying in substantially the same plane.

6. A stamping device of the class described comprising, a rigid backing member, a generally annularly disposed layer of yieldable material carried by said backing member, a layer of yieldable material carried by said rigid backing member interiorly of said generally annular layer having outwardly facing side wall portions in substantially abutting relationship with inwardly facing side wall portions of said generally annular layer of material, whereby one of said yieldable material layers tends to support the other against sidewise movement, and separate layers of design-forming material carried by each of said yieldable material layers.

7. A device as claimed in claim 6, in which each of said layers of yieldable material is provided with a plurality of spaced and generally radially extending recesses beneath its respective layer of design-forming material.

8. A stamping device of the class described comprising, a rigid backing member, a generally annularly disposed layer of yieldable material carried by said backing member, a layer of yieldable material carried by said rigid backing member interiorly of said generally annular layer having outwardly facing side wall portions adjacent a lower part thereof in substantially abutting relationship with inwardly facing side wall portions of said generally annular layer of material for restraining the annular layer against lateral movement and having outwardly facing side wall portions adjacent an upper part thereof spaced from inwardly facing side wall portions of said generally annular layer of material, and separate layers of design-forming material carried by each of said yieldable material layers having exposed surfaces lying in substantially a single plane.

9. A stamping device of the class described comprising, backing means, a layer of yieldable material carried by said backing means, yieldable material carried by said backing means having a side wall portion substantially abutting against a side wall portion of said layer of yieldable material, whereby one of said yieldable materials tends to support the other of said materials against lateral movement, and a design-forming material carried by said layer of yieldable material and free of attachment to the other of said materials.

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