June 10, 1930. E. L. ADAMS 1,762,539

METHOD OF PRODUCING EMBOSSED ESCUTCHEONS, NAME PLATES, LABELS, AND THE LIKE

Filed May 23, 1927



Fig. 1.

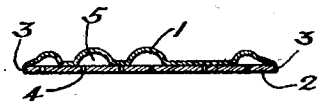


Fig. 2.

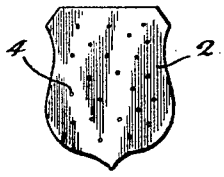


Fig. 3.

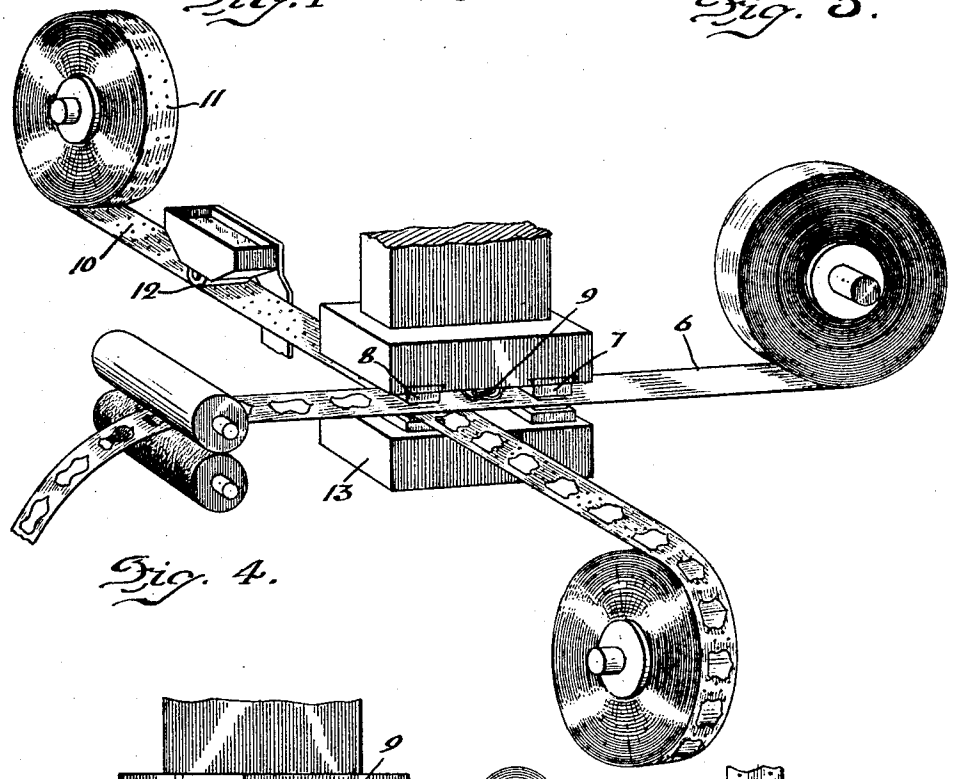


Fig. 4.

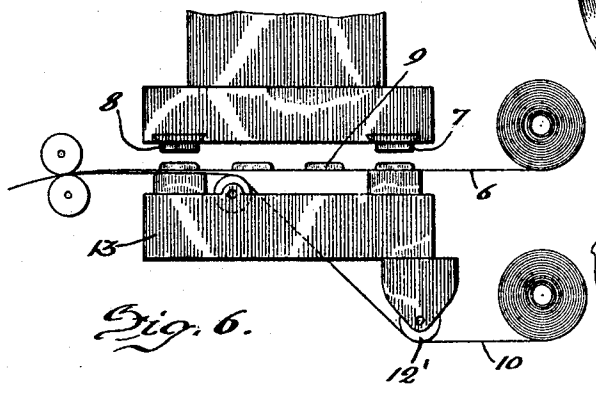


Fig. 6.

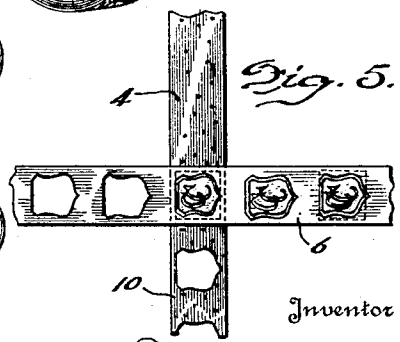


Fig. 5.

Inventor

Edgar L. Adams

By L. C. Walker

Attorney

Patented June 10, 1930 1,762,539

UNITED STATES PATENT OFFICE

EDGAR L. ADAMS, OF DAYTON, OHIO, ASSIGNOR TO ROBERT H. ANGELL, OF DAYTON, OHIO

METHOD OF PRODUCING EMBOSSED ESCUTCHEONS, NAME PLATES, LABELS, AND THE LIKE

Application filed May 23, 1927. Serial No. 193,751.

My invention relates to embossed escutcheons, name plates, labels or ornaments having a face in bas-relief and a plano back or base, and the method or process of producing the same.

The face or embossed top of the escutcheon, name plate, label or ornamental device is perfectly stamped from sheet material. This material may be sheet metal, fiber, paper, impregnated fabric, or other suitable non-plastic material capable of being impressed with a suitable design or delineation characters or figures in either intaglio or bas-relief and adapted to hold such embossed or impressed configuration and possessing or adapted to receive a suitable surface finish. The plano back or base for such embossed escutcheon may be of material similar to that of the face of the escutcheon. The preferred material is one of less density and possessing a degree of elasticity or flexibility, such as paper, fabric of composition.

It has been quite common heretofore to manufacture embossed labels, name plates and ornamental escutcheons from a composite strip of sheet metal comprising superposed strata of sheet metal and paper, fabric, or the like. In such cases it has been usual to form the composite material by effecting the adherence of the superposed strata of material prior to the embossing operation. In such case the backing strata is embossed to agree with the embossing or contour of the face. Inasmuch as the paper, fabric or composition backing material is very much softer than the metallic face of the escutcheon or embossed object there is a tendency for the displacement of such softer material laterally. Such displacement increases the thickness of the backing stratum at separated points, especially those contiguous to comparatively narrow but deep imprints. Such distortion of the backing material effects an un-uniformity of the surface other than that incident to the impressed configuration. The thickening of the stratum in areas adjacent to embossed or imprinted lines projects the material beyond its normal plane in a reverse direction or opposite the direction of the imprint or embossing operation, thereby making such backing surface so irregular and non-uniform that it will not rest uniformly on a flat surface, to which the escutcheon or art object is to be attached. Such object embossed from composite material also presents difficulties in attachment to supporting surfaces by adhesive means due to the reduced area brought into contact with such support because of its irregular configuration or contour agreeing with the contour face of the object.

The present invention is designed to overcome these difficulties by providing an escutcheon or ornamental plate or label, the top stratum or face only of which is embossed or contoured. Attached thereto at the time of manufacture is a plano or flat back or base preferably coated with an adhesive which will conform closely to the surface of the support to which the escutcheon, name plate, label or other embossed object is to be applied.

In carrying out the manufacture, the facing material or top stratum is embossed to the required configuration before being brought into association with the backing material. The latter material, which is preferably though not necessarily, previously coated with an adhesive is brought into intimate association with the previously embossed material at the moment of blanking or cutting the embossed area of material from the stock sheet or strip. While the materials may be fed together into blanking or cutting position in the same direction and in alignment with each other the preferable method is to feed these materials in transverse paths of travel which intersect each other at the blanking or cutting position. Thus the superposed backing material and embossed facing material are simultaneously cut the required shape and pressed together into adherence either due to a coating of adhesive material carried upon one or the other of such stock materials or by the burr or marginal flange of the facing or embossed stock turned upon or embedded in the margins of the backing

stock at the time of blanking or cutting, or by both these means, as the case may be. As result of this method of manufacture there is produced a hollow convex plano escutcheon, name plate or ornamental object, the face of which bears permanently embedded therein the delineations, characters or ornamental configuration while the back, being preferably of a softer or more flexible or elastic material is capable of yieldingly conforming to a supporting surface to which the object is to be attached by adhesive or otherwise. There is thus afforded a uniform contact with such support throughout substantially the entire area of the base surface. To avoid the entrapment of a body of air under pressure during the blanking or cutting operation, and to avoid the effect of expansion and contraction of an entrapped body of air between the embossed face and plano back of such object, the backing material is preferably perforated at spaced intervals so that one or more of such perforations 4 will fall within such area of the section of backing material applied to each embossed member.

The object of the invention is to improve the construction as well as the means and mode of manufacture of embossed escutcheons, name plates and art objects, or the like, whereby they will not only be cheapened in construction, but will be more attractive in appearance, capable of being more easily and securely applied to supporting surfaces and unlikely to become accidentally detached.

A further object of the invention is to provide an improved back which will normally present a substantially flat surface but which will be capable of a limited yielding characteristic which will enable it to conform to irregularities of the surface of the support to which the escutcheon or object is to be attached.

A further object of the invention is to provide an improved, efficient and economical method of manufacturing such embossed labels, name plates or escutcheons.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention consists of the features of construction, the parts and combinations thereof and the mode of operation, or their equivalents, as hereinafter described and set forth in the claims.

Referring to the accompanying drawings wherein is shown the preferred, but obviously not necessarily, the only form of embodiment of the invention, Fig. 1 is a top plan view of an embossed plate or escutcheon forming the subject matter hereof. Fig. 2 is a transverse sectional view thereof and Fig. 3 a bottom plan view of such plate or escutcheon. Fig. 4 is a somewhat diagrammatic view showing the relation of the embossing and blanking or cutting operations and the relative directions of feed of the face and the backing materials. Fig. 5 is a diagrammatic plan view showing the relative relation and movement of the parts and materials illustrated in Fig. 4. Fig. 6 is side elevation somewhat diagrammatic illustrating a modification of the method or process and apparatus for performing the same wherein the facing and backing materials are fed in the same direction and brought together coincident with the blanking or cutting die.

Like parts are indicated by similar characters of reference throughout the several views.

Referring to the accompanying drawings, 1 is the embossed top or face of an escutcheon plate, label or article. Such face or top is preferably embossed from comparatively thin sheet metal. However, it is to be understood that the invention is not limited to the use of sheet metal but fiber, composition, paper, or other suitable non-plastic material may be substituted therefor. Secured across the under or concave side of the embossed face 1 is a substantially flat back section 2 preferably of some comparatively soft material such as paper, fabric, leather or composition. This back 2 is fixedly secured to the embossed face portion 1 by being cemented. Such attachment is augmented by a marginal fin or burr 3 downturned from the face portion 1 during the blanking or cutting operation. It will be understood that the previously embossed top or face portion 1 and the back or base portion 2 are placed in superposed relation and simultaneously cut from the respective stock sections by the same blow of the blanking or cutting die. Previously to being united, the back section 2 is preferably pierced at spaced intervals to provide air vents 4 communicating with the chamber 5 formed intermediate the raised or embossed top and the flat or plano back portion 2. The back portion 2 being of more resilient or yielding material than the top 1 is capable of a limited degree of flexing action into conformity with the surface of a support to which the article is to be applied. At the same time the back section 2 will form a substantially continuous or uniform contact with the supporting surface over the entire area of the escutcheon or article which is not possible when such escutcheons or articles are embossed from composite stock wherein the backing stratum conforms to the imprinted or embossed configuration of the face.

In carrying out the process of manufacturing the materials for both the face 1 and the back 2 are preferably, though not necessarily, provided in strip form in rolls or

wound upon reels. However, if desired, such material may be employed in sheet form without rolling. The material from which the top or face 1 is embossed, if of metallic character, is first passed through a cleansing solution to clean and brighten the metal in order that the embossed portions may stand out distinctly and show contrast of light and shade after being colored or otherwise finished. The side of the materal which is to later form the concave side of the imprinted or embossed areas is preferably slightly roughened by abrasion or grinding, or a matt surface is provided by an acid treatment. This enables the under side of the top or facing material to adhere to the back section 2 by means of an intermediate coating of adhesive applied to one or the other of the materials. The prepared material is fed from a roll under an embossing die 7. This embossing die serves to imprint the strip 6 of material at spaced intervals without, however, severing the strip or removing the embossed or imprinted areas. Passing beyond the embossing die 7 the strip 6 passes beneath a blanking or cutting die with which the embossed or imprinted areas 9 of the strip are successively brought into registry with each advance operation of the press. At the same time a strip 10 of backing material is fed from a suitable supply roll 11 beneath an applicator roll 12 by which adheisve or cement is applied to such backing strip 10 which is later brought into contact with the side of the facing strip 6 containing the concave impression. If desired, the adhesive may be applied to the facing strip 6 in lieu of the backing strip 10. However, the application of the adhesive or cement to the latter strip just prior to bringing the two strips into superposed relation is preferred. The backing strip 10 is fed transversely of the facing strip 6, the paths of travel intersecting beneath the blanking or cutting die 8. Thus at each operation of the press a new impression is made in the facing strip 6, and at the same time a previously embossed area of such strip and a portion of the transversely fed backing strip 10 of like area are cut from these superposed strips and the adhesive coated surface of the one strip is pressed tghtly into contact with the adjacent face of the other strip by the pressure of the die. The blanking die 8 forms on the separated portion of the strip 6 a marginal fin or burr 3 which by the cutting or blanking pressure of the die is forced into engagement with the severed area of the backing strip 10, thereby supplementing the adhesion of the area of backing material with the embossed face 1. The waste material from which the embossed area and registered portions of the backing strip have been cut pass beyond the embossing and blanking press and through suitable intermittently operated feed rolls 11 and 12.

In lieu of feeding the backing material 10 transversely the strip of facing material 6, it may be fed in the same direction. In such case the strip of backing material 10 is fed through a suitable recess or opening in the bed 13 of the press and is guided upwardly beneath the advancing strip 6 of facing material. Intermediate the supply roll and the die 8, the backing strip 10 passes in contact with a roll 12′ by which adhesive is applied thereto. The two strips are brought into parallel relation with each other and are simultaneously cut to the required shape in registry with each other. The cutting operation also presses the strips together to effect adherence by the intermediate coating of adhesive as before described.

Prior to being fed into association with the facing strip, the backing material 10 is preferably, though not necessarily, coated on its outer side, or that side exposed when the two severed portions are united, with adhesive which is permitted to dry before the strip is rolled preparatory to the cutting and assembling operation. The finished product is thereby provided with an adhesive back or base surface. Otherwise such adhesive may be applied at the time of mounting the finished article upon its support. The spaced perforations 4 serve to vent the pockets or chambers intermediate the back 2 and the raised face 1. While as before mentioned, thin sheet metal is the preferred material for the embossed face 1, it will be understood that other materials such as fiber, paper, or composition may be substituted. The backing or base is preferably of softer material which is capable of receiving and retaining the adhesive coating necessary to attach the inner side of such backing section to the inner face of the embossed facing portion and the second coating of adhesive necessary to attach the outside of such base or backing section to the support to which the escutcheon may be applied.

It is to be understood that the present invention is distinct and separate from that set forth and described in my co-pending application, Serial No. 687,348, filed January 12, 1924, and does not include any of the features nor subject matter therein claimed.

It is to be further understood that the present invention also contemplates the production of characters, figures or ornamental outlines from flat stock not previously embossed in which the stock is fed into registry with a backing stock at a point beneath a stamping or cutting die, the superposed materials being simultaneously cut to the required shape by a single operation. This

particular application of the invention differs from the previous methods by deferring the registry and attachment of the two materials until the moment of blanking or cutting, whereas heretofore such materials have been previously attached to form a composite strip of stock material previously prepared.

While the adhesive coating may be applied to either or both of the strips of material during their approach to the point of registry with the cutting die for convenience and economy of manufacture either or both of the strips may be previously coated with adhesive and dried before being rolled in stock form. It may be found most desirable to employ as a backing material a paper or fabric stock coated with adhesive on both sides. The side of such material to be joined to the facing stock in such case would be moistened by additional adhesive or other solvent during its approach to the cutting die.

From the above description it will be apparent that there is thus provided a construction of the character described, possessing the particular features of advantage before enumerated as desirable but which obviously is susceptible of modification in its form, proportions, and arrangement of parts, without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statutes the invention is described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific details shown, but that the means and construction herein disclosed comprise the preferred form of several modes of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:—

1. The herein described method of producing escutcheons, and the like, including embossing a succession of imprints in a section of stock material, applying a section of backing material to the embossed stock subsequent to the embossing operation and before severance of the embossed areas from the stock material, and subsequently simultaneously cutting the embossed area and a corresponding registering area of backing materials from the respective stock materials.

2. The herein described method of producing escutcheons, and the like, including embossing a succession of imprints in a section of stock material, applying backing material singly to the concave sides of the embossed areas subsequent to the embossing operation, and thereafter simultaneously cutting the embossed area and applied backing material to corresponding marginal contour by a single operation.

3. The herein described method of producing escutcheons, and the like, including embossing a succession of imprints in a strip of stock material, simultaneously feeding a strip of backing material into registry with the embossed areas subsequent to the embossing operation and simultaneously stamping from the embossed strip and the registering portion of the backing strip areas of like marginal contour by a single stamping operation.

4. The herein described method of producing escutcheons, and the like, including embossing a succession of imprints in a strip of stock material, simultaneously feeding a strip of backing material into registry with the embossed areas subsequent to the embossing operation and subjecting the registered portions of the strips to a stamping operation by which the registered areas are cut to corresponding outline and a marginal fin is formed on one portion and caused to engage with the other portion.

5. The herein described method of producing escutcheons, and the like, including embossing a succession of imprints in a strip of stock material, simultaneously feeding a strip of backing material into registry with the embossed areas subsequent to the embossing operation, applying a coating of adhesive to one of said strips during their approach to registry with each other, and subsequently uniting said registered areas by pressure and simultaneously stamping areas of like marginal outline therefrom.

6. The herein described method of producing escutcheons, or the like, including stamping a succession of embossed areas in a strip of stock material, feeding said strip of embossed material and a strip of backing material in transverse intersecting paths of travel in which the embossed areas will be successively presented in registry with the transversely arranged strip of backing material, applying adhesive to one of said strips during its approach to such point of intersection and subjecting the registered portions of the strips to pressure to effect their adherence and cutting said strips simultaneously to predetermined marginal outline.

7. The herein described method of producing escutcheons, or the like, including stamping a succession of embossed areas in a strip of stock material, feeding said strip of embossed material and a strip of backing material in transverse intersecting paths of travel in which the embossed areas will be successively presented in registry with the transversely arranged strip of backing material, and simultaneously stamping from such registered portions areas of predetermined marginal outline, such stamping op-

eration forming upon the severed area of one strip a marginal fin which is projected into engagement with the other severed area to interconnect such areas one to the other.

8. The herein described method of producing escutcheons, or the like, including stamping a succession of embossed areas in a strip of stock material, feeding said strip of embossed material and a strip of backing material in transverse intersecting paths of travel in which the embossed areas will be successively presented in registry with the transversely arranged strip of backing material, and simultaneously stamping from the embossed strip and registering portion of the transversely disposed backing strip areas having like marginal contours.

9. The herein described method of forming escutcheons, or the like, including embossing an area of stock material, cementing thereto subsequent to the embossing operation and in transverse relation an area of backing material and cutting from the cemented transversely arranged areas of stock registering portions of like marginal contour.

10. The herein described method of forming escutcheons, or the like, including initially embossing an area of stock material, cementing thereto subsequent to the embossing operation an area of backing material, and cutting from the attached embossed and backing stock materials registering portions of like marginal contour.

11. The herein described method of producing escutcheons, and the like, including simultaneously feeding separate strips of facing material and backing material into registry with a cutting die, applying adhesive to one of said strips during its approach to such position, and subsequently pressing the strips into adherence and cutting therefrom registering portions of predetermined marginal contour.

12. The herein described method of producing escutcheons, and the like, consisting in simultaneously feeding separate strips of material in transversely intersecting paths of travel in which said strips will pass in registry with a cutting die, applying adhesive to one of the strips during its approach to such position and simultaneously cutting areas of predetermined outline from the registered portions of said strips.

13. The herein described method of producing escutcheons, and the like, including simultaneously feeding separate strips of facing and backing materials into registry with a cutting die, one of which strips has been treated with adhesive, and simultaneously stamping from the strips registering portions of predetermined outline.

14. The herein described method of producing escutcheons, and the like, including embossing a strip of material at intervals between relatively movable stamp members, the embossed material being projected toward the movable stamp member whereby said member will draw away from the raised area, feeding a backing strip into proximity with the opposite side of such embossed strip subsequent to the embossing operation, one of said strips having a coating of adhesive, and simultaneously cutting therefrom registering areas including such embossed portions from the respective strips.

15. The herein described method of producing escutcheons, and the like, including embossing a strip of facing material at spaced intervals, feeding a separate strip of backing material beneath the embossed strip into registry with a cutting die, one of said strips having been previously coated with adhesive and simultaneously cutting registering portions of predetermined outline from the respective strips.

In testimony whereof, I have hereunto set my hand this 14th day of May, A. D. 1927.

EDGAR L. ADAMS.