

No. 637,509.

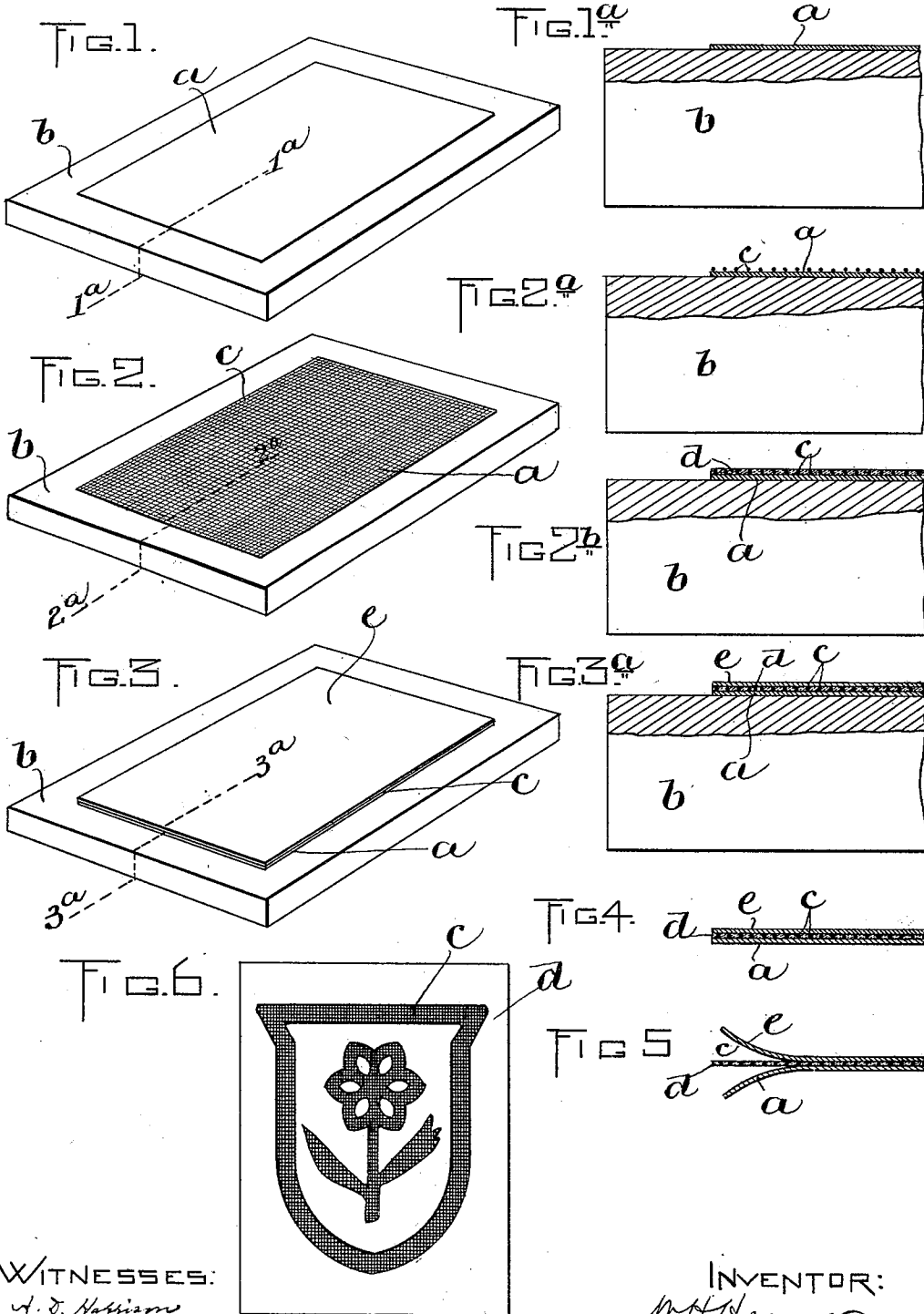
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W. H. HENAY.

MOLD FOR RELIEF ORNAMENTATION.

(Application filed Jan. 18, 1898.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

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MOLD FOR RELIEF ORNAMENTATION.

SPECIFICATION forming part of Letters Patent No. 637,509, dated November 21, 1899.

Application filed January 19, 1899. Serial No. 702,659. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. HENAY, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain
5 new and useful Improvements in Molds for Relief Ornamentation, of which the following is a specification.

This invention relates to molds adapted to be used for forming relief ornamentation on
10 objects of various kinds, such as walls and ceilings of rooms, and on portable articles, such as book-covers, cards, &c.

The invention is an improvement on the mold described in Letters Patent of the
15 United States No. 582,821, granted to me May 18, 1897, said mold being composed of a flexible reticulated sheet and a flexible filling in the meshes of portions of the sheet and
20 embedding or covering said portions, forming practically smooth surfaces at both sides of the mold, said filling being arranged to expose portions of the sheet and permit the passage of plastic material therethrough to the surface to be ornamented. The material
25 thus deposited has the form of the exposed portions of the sheet and constitutes relief ornamentation.

The present invention has for its object, first, to so improve the mold as to make it
30 capable of producing designs of greater delicacy and intricateness than heretofore, and, secondly, to enable the reticulated sheet and its flexible filling to be put upon the market in a protected condition as a mold-blank
35 adapted to be conveniently converted into an operative mold by an art-worker, who is enabled by my improvement to purchase the mold-blank and complete the mold for his own use by making portions of the filling per-
40 manent and removing other portions of the filling in accordance with the design he desires to produce.

The invention consists in the improvements which I will now proceed to describe and
45 claim.

Of the accompanying drawings, forming a part of this specification, Figures 1, 2, and 3 are perspective views representing different stages of the operation of making the mold-
50 blank. Figs. 1^a and 2^a are enlarged sections, respectively, on lines 1^a 1^a, Fig. 1, and 2^a 2^a, Fig. 2. Fig. 2^b is a view similar to Fig. 2^a,

showing an intermediate step. Fig. 3^a represents an enlarged section on line 3^a 3^a, Fig. 3. Fig. 4 represents an enlarged sectional
55 view of the protected mold-blank resulting from the steps illustrated by the preceding figures. Fig. 5 represents a view similar to Fig. 4, showing the protecting-sheets partially removed from the mold-blank. Fig. 6 rep-
60 resents a completed mold.

The same letters of reference indicate the same parts in all the figures.

In carrying out my invention I proceed as follows: On a bed *b*, of marble, glass, or other
65 suitable material, I spread smoothly a backing-sheet *a*, of paper, which has been moistened on both sides. On this backing-sheet I spread a reticulated sheet *c*, which is preferably of the same size as the backing-sheet
70 and is preferably composed of threads of fibrous material, such as cotton or silk, interwoven to form a mesh of any desired fineness. When patterns of somewhat intricate and
75 delicate design are produced, I find it desirable to use a textile fabric, such as screen or bolting cloth, the threads of which are relatively fine and form a fine mesh. The reticulated sheet *c* is preferably treated with pro-
80 tective material—such as oil, white lead or varnish—to insure durability and prevent the displacement of the threads during the subsequent treatment to which the sheet is sub-
85 jected, care being taken to avoid filling the spaces of the sheet with the said protective material, which should simply saturate or coat the threads without adding appreciably
90 to their bulk. While the reticulated sheet is resting on the backing-sheet a plastic filling *d* is forced into its meshes, said filling being forced through the meshes into close
95 contact with the backing-sheet, the outer surface of the filling *d* being formed by scraping off the surplus material to form a face which is substantially flush with the outer surfaces
100 of the threads of the fabric. The filling should be capable of readily absorbing the liquid binder, hereinafter referred to, and of adhering firmly to the threads of the reticulated sheet. It should also be capable of adhering to the backing-sheet and also to the facing-sheet, hereinafter referred to, with sufficient firmness to prevent the peeling off or detachment of said sheets until the mold is

ready for use, and at the same time it must freely release said sheets when they are moistened preparatory to stripping the mold. It is important, moreover, that the filling be
5 soluble in water, for a reason hereinafter explained. I have used with good results for this filling an absorbent consisting of a mixture of dry white lead and clay in equal parts, together with a solution of glucose and
10 flour-paste, the whole forming a plastic composition capable of being readily forced into the reticulated sheet, the glucose and paste forming a cement which is soluble in water. After the filling *d* has been formed as above
15 described and while it is soft and plastic I apply a facing-sheet *e*, of moist paper, to its outer surface. The three layers thus connected are then subjected to pressure by rolling or otherwise and are then dried. The
20 product is a protected mold-blank, which can be kept in stock by dealers and can be utilized by the art-worker in the manner described hereinafter, the said product comprising a reticulated sheet lying uniformly
25 embedded in a sheet of plastic composition and protected on either side by paper adhering to the surfaces of the compound sheet of reticulated material and composition. When it is desired to complete the mold, the facing-sheet *e* is removed, said sheet readily
30 stripping from the mold when slightly moistened. The upper surface of the composition is thus exposed, presenting a firm, smooth, and uniform ground. The composition is protected during the operation of removing the facing-sheet and during the subsequent operations by the backing-sheet, which at this
35 time adheres closely to the composition. A design adapted to the nature of the reticulated sheet can now be drawn with pencil or charcoal directly on the outer surface of the filling *d*, or may be transferred to said surface by any of the usual methods or by photography. Owing to the relative strength of the
40 filling composition, due to the presence of an adhesive material in it, such as the glucose and flour paste, the filling is capable of sustaining without injury any pressure required in drawing or otherwise applying the design
45 to its outer surface, this protection being augmented by the backing-sheet, which adheres to the filling during the operation of applying the design to its outer surface. All the outlines of the design, together with the
50 broader masses and shadings, are then treated with a suitable adhesive binding liquid, applied with a pen or brush, said liquid being of such character as that when applied to the filling it will permeate the parts of the filling
60 to which it is applied and render the same practically insoluble by water. I have used with satisfactory results a solution of shellac. I have also used coach-varnish and may use any other material which is sufficiently liquid
65 to be readily applied with a brush or pencil and is sufficiently adhesive to render the parts of the filling which it touches insoluble

in water, as above stated. After the binding liquid has dried the backing-sheet *a* is slightly moistened and stripped from the mold-blank, 70 both surfaces of which are then exposed. All portions of the filling not rendered insoluble by the binding liquid can now be washed out with warm or cold water, the result being the formation of openings in the filling, 75 through which openings portions of the reticulated sheet are exposed, said openings permitting the design of the mold to be reproduced upon any surface against which the mold may be placed by forcing plastic composition, 80 paste, or color with a brush or knife or other suitable instrument onto the surface to be decorated. Before the mold formed as above described is used to any considerable extent I prefer to treat its back with a coating of oil 85 or varnish to increase the durability of the mold.

The mold thus produced is both flexible and durable and is capable of conforming accurately to undulations and inequalities in the 90 surface to be ornamented without the liability of bridging over portions of said surface between two points between which is a recess or hollow, this result being due to the extreme flexibility obtained by the use of a 95 reticulated sheet of textile fabric. Besides the advantage of extreme flexibility and pliability obtained by the use of textile fabric I obtain a more firm and intimate union between the filling composition and the fabric, 100 the said composition adhering more tenaciously to the textile threads than to the meshes of a sheet of wire-cloth.

It will be seen that the protected mold-blank above described is not liable to injury 105 by ordinary usage in handling and shipping, so that there is no obstacle on this score to its extensive use. The completed molds above described are easily operated, presenting a uniform surface to receive the operating composition and conforming closely to the surface to be decorated, as already stated. 110 These molds can be operated effectively in producing ornamentation upon cloth, wood, plaster, paper, paint, or glass grounds and are easily cleansed when not in use. 115 Molds of minute detail or those of broader and bolder character for larger decorative work can be produced with great facility, my invention presenting to the general decorator 120 or art-worker a durable practical medium capable of effective results at moderate expense.

The life of the molds can be extended almost indefinitely by proper care in protecting the filling composition and the reticulated sheet from the friction of the operating knife or brush by a coating of suitable varnish from time to time, as circumstances may require.

I do not limit myself to the particular composition herein described as the filling composition and may variously modify the same without departing from the spirit of my invention. 130

While for various purposes, such as flexibility and capability of firm and intimate union with the filling composition, I prefer textile fabric or fibrous material for the reticulated sheet and have claimed the same hereinafter as one of my present improvements, I desire it to be understood that I do not limit myself to a reticulated sheet made of fibrous material, as other features of my invention herein described will cooperate advantageously with a reticulated sheet made of wire, as described in my former patent. For example, a filling composition having as a component part a binding ingredient—such as a solution of glucose or flour-paste, or both—will give the completed mold the desired firmness and strength, enabling it to be drawn upon, whether used with a reticulated sheet of fibrous material or of metal. Also, the mold-blank protected by backing and facing sheets may have its reticulated portion of fibrous material or of metal without departing from the spirit of this part of the invention.

It will be seen that the filling above described, comprising a suitable absorbent, such as a mixture of dry white lead and clay, and a cement which unites the particles of said absorbent to each other and to the reticulated sheet, said cement being soluble in water, is particularly useful, because it is sufficiently tough to be flexed and to be acted on by a pencil or other means used in outlining a design on the filling without liability of crumbling. Hence a mold-blank embodying my invention is both flexible and durable and is adapted to readily absorb a binding liquid to make portions of the filling insoluble and permanent.

Another point in which this invention is an improvement on the mold described in my said Patent No. 582,821 is that when the mold described in said patent is in the form of a blank the filling is not flexible, but, on the contrary, is brittle. The present invention when in the form of a mold-blank has a flexible filling, not a brittle one, and said filling is therefore not disturbed in its relation to the reticulated sheet during transportation or handling. The flexible protecting-layers permit the flexible reticulated sheet and the flexible filling to yield in transportation or when being handled without disturbing the rela-

tions between the filling and the sheet. In the patent above referred to the sheet when in the form of a mold-blank, having, as above stated, a brittle filling, could not be readily transported and handled even if provided with protecting-layers, for the reason that such handling is liable to disturb the brittle particles of the filling, which would then be liable to be removed when the protecting-layers are removed.

I claim—

1. As an article of manufacture, a protected mold-blank comprising a flexible reticulated sheet of fibrous material, a flexible dissoluble filling in the meshes of the sheet, said reticulated sheet and filling constituting the mold-blank, and a flexible protecting-layer detachably secured to the mold-blank.

2. As an article of manufacture, a protected mold-blank comprising a flexible reticulated sheet of fibrous material, a flexible dissoluble filling in the meshes of the sheet, said reticulated sheet and filling constituting the mold-blank, and two flexible protecting-layers detachably secured to the mold-blank and covering both sides of the same.

3. As an article of manufacture, a mold of the character specified, comprising a flexible reticulated sheet, and a flexible filling inserted in the meshes of portions of the sheet and composed of a composition in which powdered material is bonded or united by a soluble adhesive.

4. As an article of manufacture, a mold of the character specified, comprising a flexible reticulated sheet composed of fibrous material, and a filling composition which adheres firmly to the threads of the sheet and is soluble in water.

5. As an article of manufacture, a mold-blank composed of a flexible reticulated sheet, and a flexible filling comprising a suitable absorbent, and a cement which is soluble in water, said cement uniting the particles of the absorbent to each other and to the reticulated sheet.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM H. HENAY.

Witnesses:

C. F. BROWN,
A. D. HARRISON.