

No. 837,757.

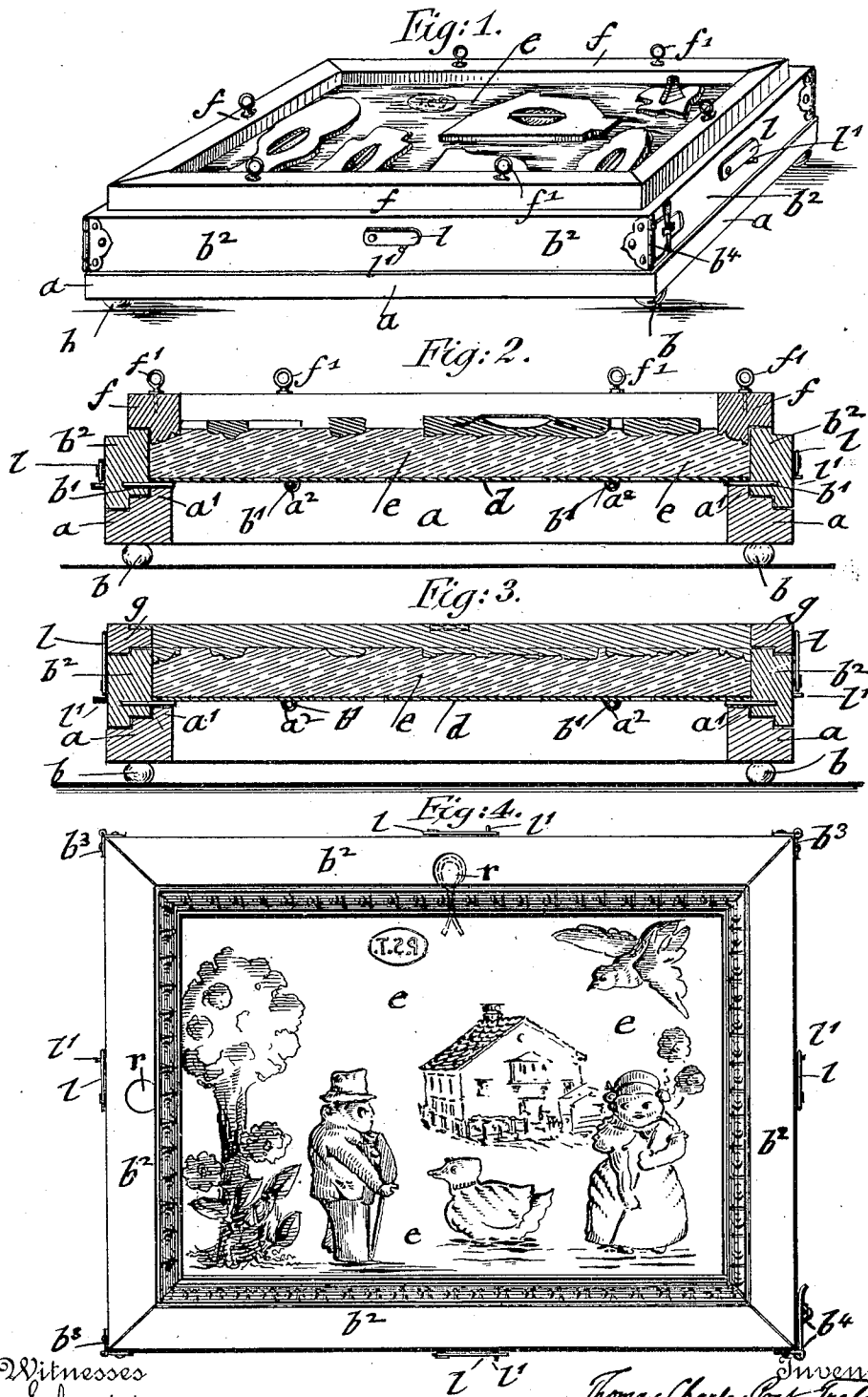
PATENTED DEC. 4, 1906.

T. C. P. TRELEAVEN.

APPARATUS FOR MAKING REPRODUCTIONS OF PLASTIC OBJECTS.

APPLICATION FILED JUNE 16, 1906.

2 SHEETS—SHEET 1.



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Fig. 5.

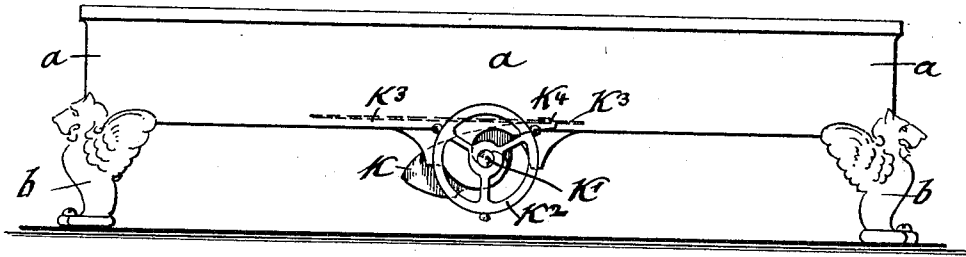


Fig. 6.

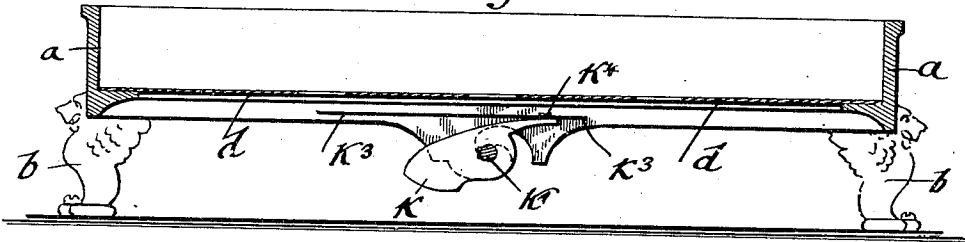
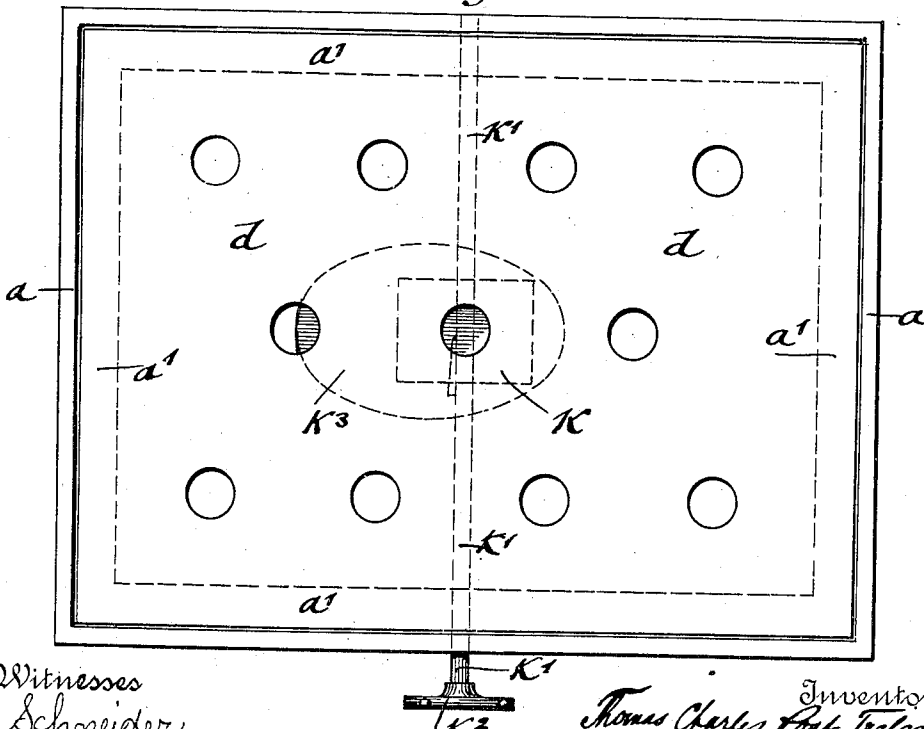


Fig. 7.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR MAKING REPRODUCTIONS OF PLASTIC OBJECTS.

No. 837,757.

Specification of Letters Patent.

Patented Dec. 4, 1906.

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To all whom it may concern:

Be it known that I, THOMAS CHARLES POAT TRELEAVEN, a citizen of the United States, residing in New York, in the borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Apparatus for Making Reproductions of Plastic Objects, of which the following is a specification.

This invention relates to an improved apparatus for making reproductions of plastic objects, which apparatus is intended to be used not only for amusement purposes, but also for industrial purposes, as it facilitates the reproduction in plaster-of-paris, cement, or other materials having setting properties of any plastic object; and for this purpose the invention consists of an apparatus for making reproductions of plastic objects which comprises a base-frame, a retaining-frame, a perforated or reticulated matrix-plate supported on said base-frame, a matrix of clay or other plastic material supported in said base-frame and matrix-plate, a removable molding-frame which is supported on the retaining-frame, and a gage-frame supported on the retaining-frame after the molding impression is made.

The invention consists, further, of certain details of construction, such as the hinge connections at the corners of the base-frame, and the locking device for the base-frame, and the means for supporting the matrix-plate at its central part when larger objects are to be reproduced in the apparatus.

The invention consists, lastly, of certain additional details of construction and special features, as will be fully described herein-after and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a perspective view of my improved apparatus for reproducing plastic objects shown in the act of making impressions in the clay matrix. Fig. 2 is a vertical longitudinal section of the same, showing the clay matrix in position in the base-frame and retaining-frame for impressing the molding around the clay-matrix. Fig. 3 is also a vertical longitudinal section, showing the gage-frame in position with a cast of plaster-of-paris in the clay matrix. Fig. 4 is a plan view of the apparatus after the objects are impressed into the clay matrix, ready for casting, said figure also showing the hinge

connections of the base-frame. Fig. 5 is a side elevation of a larger size of apparatus for making reproductions of plastic objects. Fig. 6 is a vertical longitudinal section of the apparatus shown in Fig. 5; and Fig. 7 is a plan view of Fig. 5, Figs. 5, 6, and 7 showing the base-frame of the apparatus before the clay matrix is placed in position therein.

Similar letters of reference indicate corresponding parts in the different figures of the drawings.

Referring to the drawings, *a* represents the base-frame, which is made of oblong or other shape and which is supported at its corners by suitable legs *b*, so as to be raised from the table or inclined support. The base-frame *a* is provided with an interior ledge *a'*, which is provided in its sides with recesses *a''* for supporting inwardly-projecting pins *b'* of a removable retaining-frame *b''*, which is composed of three mitered portions that are connected at three corners by exterior strap-hinges *b'''*, while the parts forming the fourth corner are locked together by means of a hinged hook, staple, and headed pin or by any other approved locking device *b''''* that permits the ready disconnecting of the parts and the opening of the hinged portions of the retaining-frame. On the interior ledge of the base-frame *a* is supported a matrix-plate *d*, which may be made either of open-mesh wire-netting or of perforated sheet metal, according to the size of the apparatus. The object of the matrix-plate *d* is to receive a matrix *e* of clay, wax, or other suitable plastic material, which is placed into the space inclosed by the matrix-plate and retaining-frame approximately up to the level of the upper edge of the retaining-frame *b''*. The soft clay, wax, or other material enters into the meshes of the matrix-plate and is anchored into the same, so as to prevent it from being lifted bodily off the matrix-plate when the object to be reproduced is removed from the plastic medium. When clay is used for the matrix, it is preferably mixed with pulverized French chalk and some oil, so as to increase its plasticity, according to the temperature and the conditions under which the objects are to be reproduced. After the clay matrix is spread evenly over the matrix-plate and retaining-frame the objects to be reproduced are pressed into the face of the matrix to a certain depth. These objects

may either be the reproduction of the hand of an individual or any other animate or inanimate object or toy figure or casts made from flowers, miniature animals, &c. Before the objects are embedded into the clay-plate a molding-frame f , which is made in a one-piece frame or in parts and which rests on the upper portion of the retaining-frame and provided at its under side with a suitable ornamental molding, is pressed into the edge of the clay matrix, so as to impart to the same a plain or ornamental border. A large molding-frame f may be composed of four pieces and provided with headed studs f' , so as to conveniently handle the same, as shown in Fig. 2. A smaller molding-frame may be in one piece and removed from the clay matrix in any suitable manner by a draw-stick or otherwise. After the molding-frame is placed in position and the objects to be reproduced are impressed into the clay matrix the four sections of the molding-frame (or the one-piece molding-frame) are removed and a gage-frame g , which is provided with a recess in its lower part that fits over the upper surface of the retaining-frame b^2 , is placed in position on the latter, as shown in Fig. 3, after which the space at the interior of the gage-frame g is filled up with plaster-of-paris, cement, or other setting material, as shown in Fig. 3, which enters into all the depressions of the clay matrix. A hanger for the cast may now be inserted into a recess r of the gage-frame and the shank of the hanger embedded in the setting material and retained by a layer of cotton or other textile material placed over the shank to prevent dislocation of the hanger and fracture. A scraper is next passed over the upper surface of the gage-frame and the setting material, so as to bring the latter to the level of the same. The plaster-of-paris or other setting material is permitted to set for a sufficient length of time in the matrix. After the cast is hardened the gage-frame is removed and the retaining-frame opened by releasing its locking device, so that it releases the clay matrix. The plastic reproduction of the objects in the matrix-plate is then removed. When the reproduction is removed, the clay matrix, being anchored into the matrix-plate, is prevented from following the upward motion of the cast. Any number of casts may then be made in the manner described. When a new clay matrix for reproducing another set of objects is to be inserted into the apparatus, the retaining-frame is opened on its hinges after unlocking its locking device, so that the old clay matrix can be lifted off the matrix-plate without disturbing the base-frame and a new clay matrix be placed onto the matrix-plate and into the retaining-frame, ready for the next object or objects to be reproduced. This can be repeated for any number of times, ac-

ording to the number of reproductions to be made.

When figures or other articles, such as toy figures, having a ring, pin, or stud, are to be reproduced, the originals are embedded into the clay matrix and placed in position and removed by a draw-stick, placing-stick, and other tools by which the handling of the objects in pressing them into and removing them from the clay matrix is facilitated. These figures may be provided in their back portions with metal strips that are secured into the same, so as to properly handle them when embedding in or withdrawing them from the face of the clay matrix.

To the outside of the retaining-frame b^2 are applied pivoted lugs l , which rest normally on stop-pins l' , that are driven into the retaining-frame, but which when turned up serve to hold the gage-frame g in position, so as to prevent the accidental shifting or detaching of the same. The normal position of the pivoted lugs l is shown in Fig. 1, while the upright position of the same for holding the gage-frame in position is shown in Fig. 3.

When larger sizes of objects are to be reproduced, an apparatus of larger size than that shown in Figs. 1 to 4 is used. In Figs. 5 to 7 is shown the base-frame and matrix-plate of such an apparatus, the remaining parts being of the same construction as those shown in Figs. 1 to 4. In this case a knuckle k is keyed to a transverse shaft k' , which is supported in bracket-bearings of the base-frame below the matrix-plate and operated by a hand-wheel k^2 , as shown in Fig. 7. To one end of the knuckle k is applied a yielding plate k^3 of sheet metal, which is attached thereto by means of a fastening-screw k^4 . Whenever the matrix-plate requires additional support at its center, the hand-wheel of the knuckle-shaft is turned so that the yielding plate is moved up to the under side of the matrix-plate, and thereby the matrix-plate prevented from bulging or bending in downward direction. The yielding plate k^3 may be of oval or other shape, as shown in Fig. 7. This knuckle arrangement may also be used on the device shown in Figs. 1 to 4. When the casts have been made and removed from the matrix, the knuckle k , with its supporting-plate k^3 , is lowered, so that the clay matrix can be readily removed from the matrix-plate and a new clay matrix inserted, another cast or casts made, and so on. The shaft k' , with its hand-wheel, knuckle, and knuckle-plate, can be readily removed from its bracket-bearings on the base-frame, so as to be conveniently packed and shipped with the other parts of the apparatus.

The apparatus can be utilized commercially as an educational means for teaching the casting of plastic material and is of special advantage to trade or other schools in which the principles of the art of founding are to be

taught by object-lessons, or it may be used as an amusement apparatus by children for enabling them to reproduce any objects—such as their hands, fingers, feet, or any other part of the body—in connection with an ornamental molding-frame, so that when the cast is made a correct reproduction of the object or objects is obtained in connection with an ornamental border. By properly impressing the objects into the clay matrix the most minute details of the same are reproduced. The apparatus can also be used as an exhibition apparatus in show places or at the seashore, fairs, &c., so as to enable thereby the visual reproduction of any desired object.

Though the method of using the apparatus has been described in connection with the parts of the same, it is best to repeat briefly the operation of the apparatus: The retaining-frame is first placed onto the base-frame and the matrix-plate placed in position. A layer of soft clay is then placed in position in the retaining-frame and matrix-plate. The molding-frame is then placed in position on the retaining-frame. The objects to be reproduced are then impressed or embedded into the clay matrix and removed therefrom after the impress has been made. The molding-frame is then removed. This molding-frame is used for the purpose of arranging an ornamental frame around the impressions, so as to give an ornamental border to the reproduction after the same is cast. The gage-frame is then placed in position on the retaining-frame and the plaster-of-paris or other setting material cast into the clay matrix. The surplus is evened up with the gage-frame. After the cast has set the gage-frame and the retaining-frame are removed and the reproduction lifted away from the clay matrix, the latter, as well as the cast, sprinkled with water and the cast permitted to dry. The cast can then be decorated, if desired.

For smaller or pocket arrangements of this device a number of prepared-clay matrices may be placed on shelves in a storage box or receptacle, so as to be ready for instant use.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An apparatus for reproducing plastic objects, which comprises a base-frame, a retaining-frame supported on said base-frame, a matrix-plate supported on the base-frame, a clay matrix on the matrix-plate, and a molding-frame supported on the retaining-frame.

2. An apparatus for reproducing plastic objects, which comprises a base-frame, a retaining-frame supported on said base-frame, a matrix-plate supported on the base-frame, a clay matrix, and a gage-frame supported on the retaining-frame.

3. An apparatus for reproducing plastic objects, which comprises a base-frame, a retaining-frame supported on said base-frame, and hinged at the corners, a matrix-plate supported on the base-frame, means for locking or unlocking the retaining-frame, a clay matrix supported on the matrix-plate and retaining-frame, and a gage-frame supported on the retaining-frame.

4. An apparatus for reproducing plastic objects, which comprises a base-frame, a retaining-frame supported on said base-frame, a matrix-plate in said base and retaining frames, a gage-frame supported on the retaining-frame, and means for locking the gage-frame to the retaining-frame.

5. An apparatus for reproducing plastic objects, which comprises a base-frame, a retaining-frame supported thereon, a matrix-plate in said base-frame, means for supporting the matrix-plate at its central portion, a clay matrix in said retaining-frame, and a gage-frame supported on said retaining-frame.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

THOMAS CHARLES POAT TRELEAVEN.

Witnesses:

PAUL GOEPEL,

HENRY J. SUHRBIER.