March 20, 1951 T. F. SHERBLOOM 2,545,592

METHOD OF MAKING ICE MOLD FIGURES

Filed Jan. 26, 1948

Fig. 1

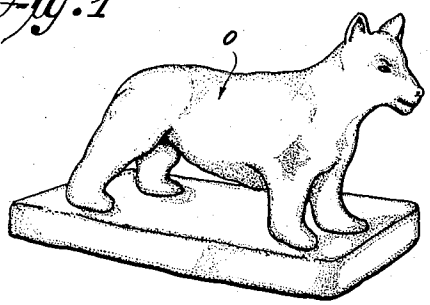


Fig. 2

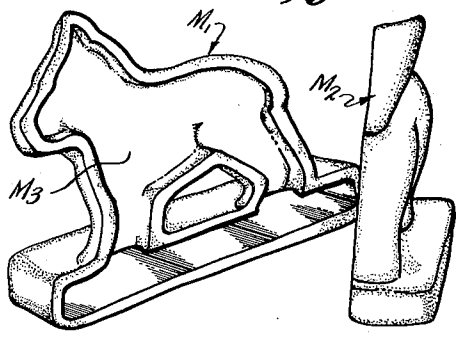
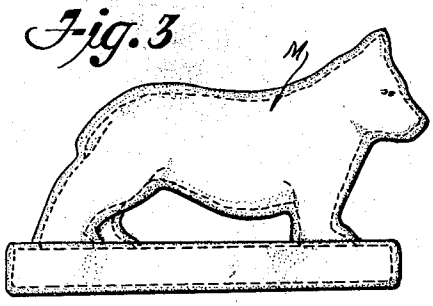


Fig. 3



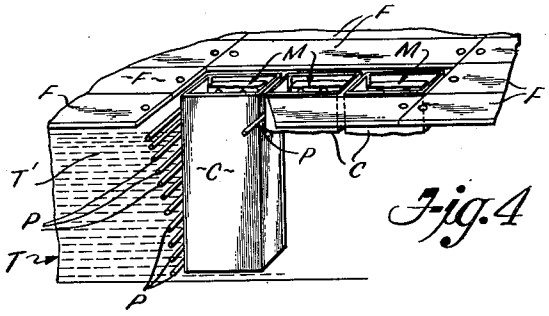


Fig. 4

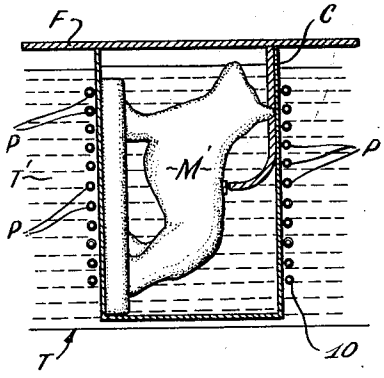


Fig. 5

Fig. 6

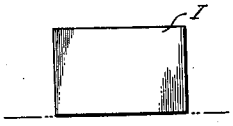


Fig. 7



Fig. 8



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METHOD OF MAKING ICE MOLD FIGURES

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2 Claims. (Cl. 62—172)

1

This invention relates to and has for a general object the provision of a method and means for producing sculptured ice objects of art in large numbers and of identical form with fidelity to an original subject.

So called "ice carving" has of recent years developed into a thriving art, and demand for carved ice objects for decorative purposes at banquets, in show cases, window displays and on various other occasions is rapidly increasing to a degree where the demand far exceeds the available supply, due particularly to the fact that each piece must be separately carved from a block of ice by an expert and an artist and the employment of a peculiar and highly developed technique which few artists have.

It is an object, therefore, to provide a method and means for producing ice objects in what may be referred to as "production quantities" and which when completed will simulate an originally sculptured object thereby substantially reducing the cost of the reproductions over original carvings, economizing in time and labor and the cost to users, and rendering the reproductions capable of being made by unskilled persons in as large numbers as may be required.

Another object is to coordinate and adopt my method to conventional ice making processes in order that my method may be readily practiced in any operating ice plant or even domestically in home refrigerators.

Other objects will appear as the description of my method and means progresses.

I have shown in the accompanying drawing certain old and new devices which when combined in the manner hereinafter described satisfactorily serve to attain the objects of my invention, subject to modification, within the scope of the appended claims, without departing from the spirit of the invention.

In said drawing:

Fig. 1 is a perspective view of an original sculptured object or matrix made of clay, plaster or other suitable material;

Fig. 2 is a perspective view of a pair of mating mold members forming a permanent mold made from the matrix of Fig. 1 and separated to show the interior of one part and the exterior of the other part;

Fig. 3 is a side elevational view of a permanent mold assembled for use in a molding operation;

Fig. 4 is a fragmentary perspective view of a commercial ice making plant in connection with portions of which the molds of my system are adapted for use;

2

Fig. 5 is a fragmentary section in elevation of a plant unit in which one of my molds is operatively supported preparatory to a freezing operation;

Fig. 6 is a side elevational view of a block of ice in which a mold bearing a frozen object is imbedded and before removal of the surplus ice from the mold;

Fig. 7 shows the mold still enclosing the frozen reproduction of the original of Fig. 1 after the removal of surplus ice therefrom; and

Fig. 8 shows a completed frozen reproduction of the original subject after removal from the mold.

I prefer to employ the facilities of commercial ice making plants in the practice of my invention due to the existence of such plants in both large and small communities and that by mere shipment of desired molds to selected points or plants or authorization of such plants to use my invention demands may be satisfied for my products which would not be otherwise met.

Hence, I will briefly describe the structure and operation of a typical ice plant such as is illustrated in Fig. 4. Such a plant includes one or more tanks T filled with brine as at T' and subdivided at its top into a plurality of sections individually covered by floor slabs F, F. Usually each section is formed to receive a plurality of cans C (preferably three per section) adapted to be filled with filtered water and submerged in the brine T', floor sections F serving as covers for the cans C. A suitable refrigerant is pumped through pipe coils P which extend in tiers in opposite direction throughout tank T in proximity to and between the rows of cans. Thus, the brine is cooled to about fourteen degrees Fahrenheit by the coils P and water in cans C is frozen from the outside inwardly by conduction from the brine T'.

When a freezing operation is completed (usually after 12 to 14 hours), the cans are removed from the brine and allowed to sweat for a requisite period of time in a room of higher temperature than freezing point so as to loosen the ice from the walls of the can, after which the blocks I (Fig. 6) are removed for use.

During a freezing operation a jet of compressed air is admitted to the interiors of the cans C for agitating the unfrozen water, the water is drawn off by a suction tube and fresh water is supplied to the void chambers of the then but partially frozen block of ice, for the purpose of removing all impurities from the forming ice. It is to be noted that when water is in a process of freezing the impurities gravitate or work to a common central point in the frozen block and all possible efforts are directed toward removing such alien

matter before freezing is completed including air pockets.

The initial step of my method consists of the production of an original sculpture, carving or the like O (Fig. 1) of clay, plaster, wood, stone, metal or other material forming a matrix from which I then produce a permanent mold M (Fig. 2) composed of two or more separable parts as at M_1 and M_2 and which parts are adapted to be secured together by any suitable means (not shown and not material to this invention). Such molds are preferably made of non-corrosive material such as rubber or plastic, but may be made of brass, bronze, copper or aluminum. The cavities, as at M_3, of the mold members conform exactly to the configuration of the original O. Generally the mold members are not held together so as to provide a water tight joint between the members.

The can C being submerged in the brine T' and the mold being submerged in the water of can C, freezing is effected gradually from the walls of the can inwardly until the contents of the can and mold are completely frozen and in readiness for removal from the refrigerating medium and the mold in succession. Hence, the mold bearing cans are removed and for a necessary period of time subjected to a sweating temperature for loosening the ice block I from the walls of the cans.

At the completion of the sweating interval the ice blocks are removed with the molds M and the frozen objects imbedded therein, placed on a suitable surface and the surplus ice surrounding the molds chipped off thereby leaving the molds completely bare of ice.

The molds (Fig. 7) may then be sweated or air or water at a moderate temperature sprayed over the molds for loosening the mold parts from the enclosed produced image O' (Fig. 8) of the original O.

In domestic usage of my method and means the molds may be placed in trays in a refrigerator within the influence of refrigerating coils common to domestic refrigerators, and the trays may be filled with plain water, although of course in such cases the reproduced images would be of small size as compared with commercially produced objects.

Completed objects O' may be washed with water as from a service base for smoothing the surfaces and freeing the objects of ice flakes and minor surface imperfections so that the finally treated objects will be clear and transparent.

In the molding process I may arrange flowers at points in the mold cavity so that they will be frozen in the ice bodies of the reproduced articles. Also the arrangement of the molded objects in window displays and on banquet tables in connection with imbedded or externally applied flowers and varicolored electric lights provides highly decorative features which by employment of my method and means may be provided on occasions when the cost of individually carved ice objects would be prohibitive.

I claim:

1. The method of producing frozen replicas of original sculptured objects which consists of submerging a water bearing mold having a cavity corresponding to the external surface of the original sculpture in a water bearing container, submerging the mold bearing container in a tank containing refrigerated brine for a period of time sufficient to encrust the mold and its contents with ice in a block corresponding in form to the container and to simultaneously freeze the water within the mold, removing the mold included block of ice from the container and thereafter successively removing the incrusted ice from the mold and the mold from the reproduced object.

2. The method of producing frozen replicas of an original subject which consists in simultaneously subjecting a water filled outer mold for forming a block of ice and a water filled inner mold borne by the outer mold to the influence of a refrigerant for a sufficient period of time to embed the inner mold and its contents in a block of ice formed by the outer mold and also to freeze the contents of the inner mold, removing the block of ice containing the inner mold and its contents from the outer mold, and thereafter successively removing the ice surrounding the embedded inner mold and the inner mold from the frozen replica of the original subject.

THOMAS F. SHERBLOOM.

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