

# UNITED STATES PATENT OFFICE.

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## PREPARING MINERAL WATERS FOR TRANSPORTATION.

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*To all whom it may concern:*

Be it known that I, LUCIEN H. BARKDULL, a citizen of the United States, residing in Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Methods of Preparing Mineral Waters for Transportation, of which the following is a specification.

This invention relates to improvements in methods of preparing liquids for transportation, and has for its prime object the reducing of liquids to a suitable form for transportation, whereby the cost of packing in any receptacles may be obviated and of transporting the same be reduced, and the purity of the liquid against contamination during transportation insured.

A further object is to prepare liquids for transportation in such manner that, while the cost of package and transportation is reduced and the purity of the liquid protected and retained, the said liquids at the same time are always ready for instant use, and in a form most palatable and beneficial.

In carrying out my invention I design to submit any freezable mixture or liquid to the act of nature or of artificial means of freezing, in order to reduce the said liquids to the form of an ice, and in such shapes and contours as will best subserve the purposes of storing them in suitable cars or vehicles for transportation.

My invention has more particular reference to its use in connection with preparing natural mineral waters for transportation and consumption, vast quantities of which are daily lost from the natural outpour of these springs, for the method now in vogue of preparing these waters for the market, consisting of storing them in cans, bottles, or other suitable receptacle of various sizes, is obviously inadequate to utilize the entire product of these springs, and aside from the loss of material comes the immense cost of packing and transportation, which necessarily places the market price of these waters at such a figure that a comparatively small amount of them can be sold. The packages of themselves are very expensive and require a very laborious process in the manufacture to prevent contamination of the waters contained therein, the market

value of which is materially lessened by their slightest contact with the solder employed for uniting the joints of packages of material other than glass, which is the cheapest form of packing, and is therefore most generally used, for the expense of bottling is almost out of the question, and when transported in bulk they are not only subject to great loss from leakage, but are also liable to contamination from other commodities shipped in company therewith, and even from the atmosphere itself. In addition to this, all these forms of package occupy a great deal of space and add such weight to the water that nearly two-thirds of the cost of transportation is paid for these same packages, which have to be returned to their original point of shipment empty and useless, but which must be paid for as so much freight. By the employment of my invention these waters may be led off from the springs to ponds, tanks, or other suitable receptacles, to be acted upon by nature during the winter months, or by any suitable ice-machines during either summer or winter, or else subjected to the action of a freezing-mixture in any well-known and convenient manner, by which the water may be reduced to the form of ice molded in any suitable shapes of blocks, or cut up after being congealed, and in this manner the entire supply of these natural springs may be utilized and readily reduced to the form of ice for shipment to any suitable point. This ice will obviously retain all of the medicinal qualities and purity of the natural water, and in transportation would require no covering or package whatever, but may be shipped in the same manner as obtains in the transportation of ordinary ice, or be utilized for the purpose of refrigeration in suitable cars so constructed that the drip or water from the said ice may be caught and held until the car reaches its destination, when the said water may be drawn off and placed in any suitable receptacle, ready for use; and if these cars are so built as to have an air-tight ice-chamber it is obvious that no contamination of either the ice or the water melting therefrom could occur, no matter what grade or class of commodity the refrigerating-car might contain. In this manner the use of the ice for the purpose of refrigeration would

fully pay for the cost of its transportation; but even if packed and shipped in the ordinary manner there would be enough additional ice shipped in place of the packages now employed for containing the water to reduce the cost of transportation of the total amount to at least one-third of the present cost, which would necessarily have the effect of reducing the market price and value of these waters to such a figure that persons in very moderate circumstances could well afford to make use of this ice, not only for its cooling properties, but for the medicinal properties contained in the mineral water, and the supply of this water by means of the method herein set forth could readily be made to keep pace with the consumption thereof. When received at its point of destination, this ice may be sold in that form for domestic use, or for drinking when melted, and would obviously effect a great saving in the present means for providing cool and palatable drinking-water, and especially mineral water, for when melted the ice would return to its natural form of water, but be cool and palatable without the necessity of employing ordinary ice in cooling it; or else the ice may be reduced to the form of a liquid and stored in any suitable and convenient manner; but the first use will likely prove the most preferable, because of the product of the melted ice being ice-cold mineral water; but while I have described, principally, the use of my invention in connection with mineral waters, it is obvious that it might be employed with equally satisfactory and beneficial results in connection with any other freezable liquid in which purity and palatability are the essential points, but in which the cost of transportation now figures to such an extent in some of the liquids used in large quantities as to increase the selling price beyond all reason, and necessitate the adulteration of the said liquids in order that the desired profit may accrue from the sale thereof; and principal among these would be milk, to which the foregoing methods and arguments equally apply.

My invention relates solely to the freezing of only such waters as are known and sold in the trade as "mineral" or "medicinal" waters, and as such have a commercial value,

and are distinguished from ordinary waters, whether spring or otherwise, which are not recognized in the trade as mineral or medicinal waters, and which in the form of ice are and can only be used for the one sole purpose of cooling or refrigeration, and have no intrinsic value whatever, except when in the form of ice, and therefore when melted become so much waste water, of no market or domestic value beyond that of any ordinary water within the reach of all, for the principle or method involved in my invention has reference only to the reduction of liquids having an intrinsic value other than their market value as ice, for the purpose of protecting and retaining the purity of such liquids against contamination during and to save cost in their transportation, and, further than this, to utilize a vast amount of marketable commodities now lost, because of the methods of transportation now in vogue, which increase the cost at the point of consumption to such a figure as to place them practically beyond the reach of the majority of mankind; and the method herein set forth will be found of special benefit to those parts of the country in which, although the supply of water is abundant, it is so impure, even when reduced to the form of ice, as to be unhealthy, and therefore unfit for use for all domestic purposes.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The herein-described method of preparing medicinal or mineral liquids having a market value for transportation, consisting in reducing the said liquids, either by natural or artificial means, to the form of ice, whereby their purity is preserved during and a great saving effected in transportation.

2. The herein-described method of preparing medicinal or mineral liquids having a market value for transportation, consisting in reducing the said liquids, either by natural or artificial means, to the form of ice in blocks of a suitable size, shape, and configuration, whereby saving in the packing space, and consequently in the cost of transportation, is effected.

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Witnesses:

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