United States Patent

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[54] **COMPRESSED SALT BLOCK AND METHOD**
1 Claim, 10 Drawing Figs.

[52] **U.S. Cl.** ..... **206/65 B,** 224/55, 229/52 AL
[51] **Int. Cl.** **B65d 71/00**
[50] **Field of Search** ..... 224/58, 55, 51, 54, 49; 206/65 B; 119/51; 294/67, 74; 229/52 AL

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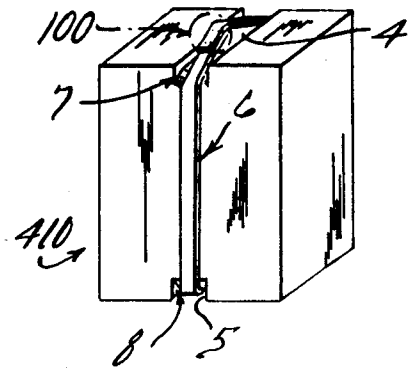
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Attorney—Harness, Dickey and Pierce

ABSTRACT: A compressed sodium chloride salt block suitable for use as a salt source for animals, for brine-making in water-conditioning units, or for like uses requiring such salt blocks, wherein said block is comprised of a structure which includes one or more recessed surfaces or recess means on the surface of said block primarily operative to leave a free space between the body of said block and the surface on which it is to be supported so that the band or strap may be freely removed, and secondarily operative to retain the band or strap or the like in position on the block such that the compressed salt block can be readily grasped by hand for lifting and handling of the block, with the band or strap including releasable means as a part thereof such that the band or strap can be removed from the salt block if desired upon termination of the lifting or handling of the block; and, the method of preparing said salt block as well as the method of handling and using said salt block.



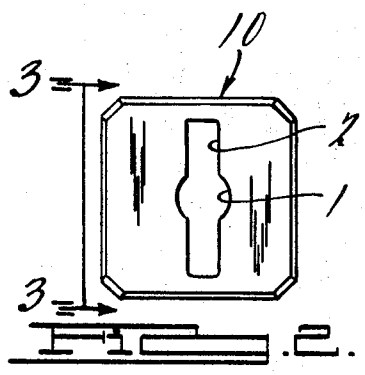


FIG. 2.

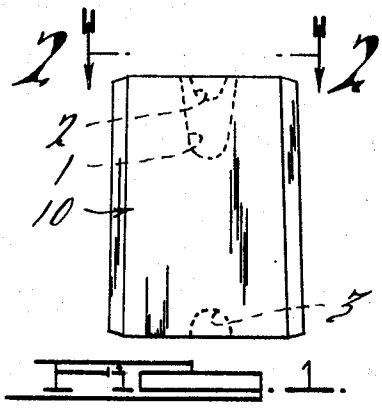


FIG. 1.

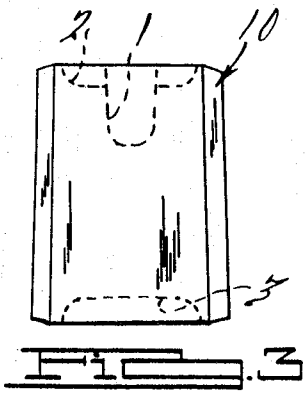


FIG. 3.

FIG. 4.

FIG. 5.

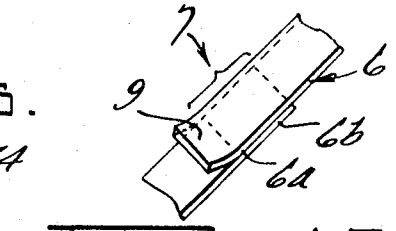
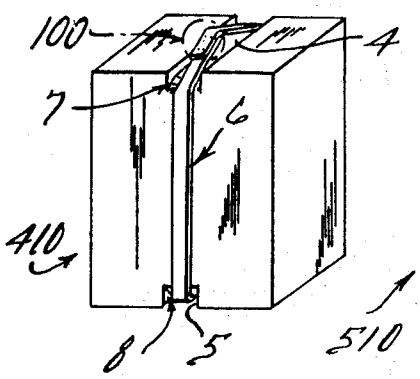
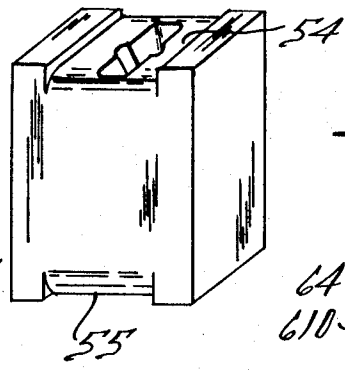


FIG. 10.





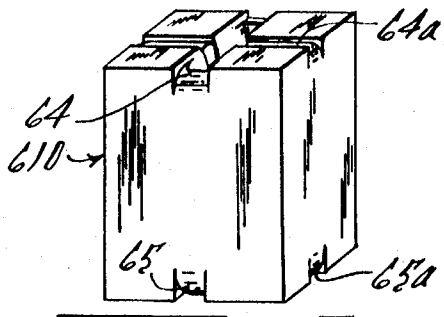


FIG. 6.

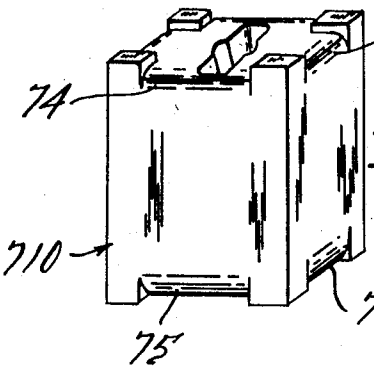


FIG. 7.

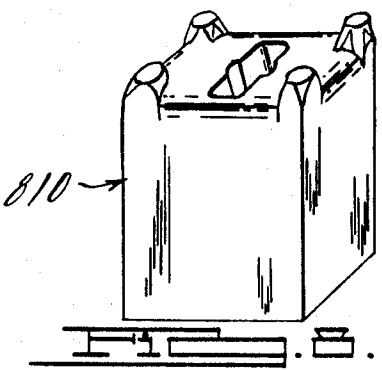


FIG. 8.

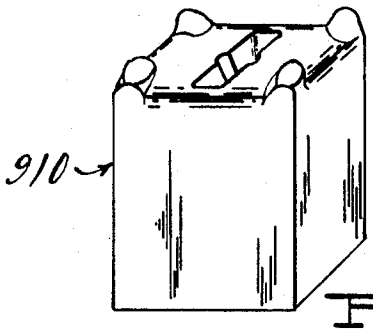


FIG. 9.

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COMPRESSED SALT BLOCK AND METHOD

BACKGROUND OF THE INVENTION

This invention broadly relates to compressed salt blocks. More particularly this invention relates to compressed salt blocks which may be easily lifted or handled, etc., due to a unique removable carrying handle means provided on the salt blocks.

Compressed salt blocks are a standard item of commerce. The most important type of such block is the 50-pound cattle block, although there is a growing use for specially compressed 50-pound salt blocks for strengthening the brine in water-conditioning units or the like, and for making brine for domestic water softeners. Most of the 50-pound blocks produced in the United States are made on hydraulic presses, and the blocks are produced at rates generally anywhere from 275–320 blocks per hour at hydraulic pressures in the range of approximately 550–700 tons per block.

Generally such 50-pound blocks are approximately 8½ inches square at one end, tapered to 8½ inches at the other end, and being 11 inches high. As referred to the most common use of these blocks is as a source of salt for animals on pasture, etc., but considerable quantities of such salt blocks are used for brine-making.

The invention disclosed herein is of particular use and application when the blocks referred to are used for brine-making in water-conditioning units such as are ordinarily found in homes, however, the invention is also of particular value when these blocks have to be moved individually for any purpose.

Brine tanks for home water softeners may conventionally be of numerous and various different sizes, but a typical size may be about 17 inches in diameter and about 22 inches deep to a shelf which supports the salt block. These supporting shelves are frequently made of perforated fiberboard or some similar material. While these shelves are sufficiently strong to hold the salt or the salt blocks, they are not designed to withstand having a 50-pound block dropped on them, for example from even a height of a few inches. The block must be lowered to the supporting shelf and this is an unwieldy operation and one that is improved upon by the inventive discovery disclosed herein.

A band or strap fastened in a vertical plane around a salt block could be used generally as a handle for lifting and handling of the block, but when the block is lowered into and set upon a supporting shelf as described above, the strap would normally be difficult to remove because it would be held between the shelf and the block.

Accordingly one object of this invention is to provide a salt block which includes a band or straplike handle which may be removed after the block is lowered onto a support shelf within a water-conditioning unit.

Another object of the invention is to provide a salt block which is generally provided with a unique band or straplike handle from which the block will not be dropped during handling thereof.

Still another object of the present invention is to provide a salt block wherein sharp corners on the surface of the block which bear against the straplike handle are eliminated such that damage and weakening of the strap is prevented.

Another object of the present invention is to provide an improved compressed sodium chloride salt block.

Another object of the present invention is to provide a method of preparing a unique and unexpectedly advantageous sodium chloride salt block.

Another object of the present invention is to provide a method of using salt blocks.

Therefore, a particularly important feature of this invention is the provision for the removability of the band or strap without encountering a "pinching" action that would normally occur or take place if the appropriate recessed surface structure of the block were not provided.

Other objects, features and advantages of the present invention will become apparent from the subsequent description and the appended claims taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates an upright view of a conventional 50-pound salt block;

FIG. 2 illustrates a top view of the salt block of FIG. 1 taken along the line 2—2 thereof;

FIG. 3 illustrates a side view of the salt block of FIG. 1 taken along the line 3—3 thereof;

FIG. 4 illustrates a modification of the salt block of FIG. 1 in accordance with the invention described hereinafter;

FIG. 5 illustrates a further modification of the FIG. 4 salt block;

FIG. 6 illustrates a still further modification of the salt block of FIG. 4;

FIG. 7 illustrates a modification of the salt block of FIG. 6;

FIG. 8 illustrates still another modification of the invention herein wherein the salt block contains protuberances for purposes disclosed hereinafter;

FIG. 9 illustrates a modification of the salt block of FIG. 8; and

FIG. 10 illustrates an enlarged portion of the area designated "100" in FIG. 4.

SUMMARY OF THE INVENTION

Briefly stated the present invention comprises, from a method aspect, the method of preparing a salt block comprised of: a compressed block of sodium chloride salt, band means generally around said block and particularly adapted for being grasped manually for lifting and holding of the block, means on the surface of said block operative to provide a free space between the body of the block and a surface on which it is to be supported and operative to generally facilitate retaining of said band means in position on the block said band means including, releasable means holding said band means together as desired during lifting and handling of the block and operable to be generally easily released if desired upon terminating said lifting and handling of the block, said method comprising the steps of: filling a press with a predetermined amount of sodium chloride salt, pressing the salt to form said compressed block, placing said band means on the block.

From a product aspect, briefly stated, this invention comprises a compressed sodium chloride salt block for use as a salt source for animals, or for brine-making in water-conditioning units, or like uses requiring such salt blocks, comprising: a compressed block of sodium chloride salt, band means generally around said block and particularly adapted for being grasped manually for lifting and handling of the block, recess means on the surface of said block operative to provide a free space between the body of the block and a surface on which it is to be supported and operative to generally facilitate retaining of said band means in position on the block, said band means including, releasable means holding said band means together as desired during lifting and handling of the block and operable to be generally easily released if desired upon terminating said lifting and handling of the block.

The method of using the above-described product also forms a portion of this invention as disclosed hereinafter.

DESCRIPTION OF PREFERRED EMBODIMENTS

FIGS. 1–3 illustrate a conventional 50-pound salt block designated 10, wherein there is shown a number of depressions or cavities which are molded into the block during hydraulic pressing to form same. The cavity designated 1 is a stake hole used to support the salt block 10 off the ground when the block 10 is used to furnish salt to animals on pasture, etc. For this use the block 10 would be inverted from the position shown in FIG. 1 of the drawings. The cavities or depressions designated 2 and/or 3 are handholds or handgrips used to facilitate lifting of a conventional salt block of the type illustrated in FIGS. 1–3.

FIGS. 4–9 illustrate several salt blocks in accordance with the invention herein which are adapted to permit the use of a band, strap, rope, or the like as a carrying handle. It should be noted that the stakehole and/or handholds have been omitted from FIG. 4 for the sake of ease of illustration, but it is to be understood that they may be present in the blocks (as shown in FIG. 5) in addition to the inventive features disclosed herein.

FIG. 4 illustrates one embodiment of this invention wherein two narrow grooves or recesses 4 and 5 had been molded into the block 410 so that a band or straplike means 6 which has been placed in the recesses and around the block 410 for use as a handle can be used in the lifting, handling, and positioning of the block. The strap 6 referred to in FIG. 4 may be readily released from the block if desired upon termination of the handling of the block if desired, as will be described in more detail hereinbelow. It is to be noted that the corners of the salt block have been rounded off at the points designated 7 and 8 (and similarly so on the opposite unviewed side of the block) and these rounded points prevent the block from scraping or otherwise weakening the strap 6.

FIG. 5 illustrates a salt block designated 510 wherein grooves or recesses 54 and 55 have been widened (relative to the recesses 4 and 5 respectively shown in FIG. 4). Widening of the recesses as designated 54 and 55 has been carried to an extent such that the salt block may be considered as having two raised edges on each end, and construed in this light it should still be understood that the salt block contains what may be termed recess means or a recessed surface suitable for retention of a band or straplike handle, as disclosed more fully hereinafter. It should be understood that the wide recess as designated 54, 55 will readily permit the removal of the strap at the termination of the handling or positioning of the salt block, but that the narrower recess as shown in FIG. 4 will more readily prevent a salt block from tipping within the looplike handle.

FIGS. 6 and 7 correspond in general to the embodiment shown in FIGS. 4 and 5 respectively except that the block 610 of FIG. 6 and the block 710 of FIG. 7 have two sets of recesses rather than one. The FIG. 6 recesses are designated 64, 65, 64A and 65A. The FIG. 7 recesses are designated 74, 75, 74A and 75A. When the intersecting recesses are of relatively wide dimension as in FIG. 7 the block 710 may be considered as having a set of four legs on each end, however, it is to be understood that this in effect still constitutes groove or recess means on the exterior of the block for the purpose of holding a strap or handle.

It furthermore should be understood that the legs of FIG. 7 may and should be considered the result of two wide intersecting grooves 74—75 and 74A—75A, on the top and bottom of the block, that the same objective can be accomplished by having a number of protuberances of any satisfactory shape, such as for example, the protuberances as illustrated in FIGS. 8 and 9, which show salt blocks 810 and 910 respectively. The protuberances shown in FIGS. 8 and 9 are illustrated at the top of the salt blocks 810 and 910, but it is to be understood that they may just as well be, and preferably are, on both ends of the blocks.

By the terminology recess means as used herein it is meant to include any suitable means on the surface of the salt blocks disclosed herein, which means would be operative to provide a free space between the body of the block and a surface on which it is to be supported and operative to generally retain a strap or band means in position on the blocks.

By the terminology band means as used herein it is meant to include strap means, rope means, belt means, or any like means suitable for being disposed around the salt blocks and being particularly adapted for being grasped manually for lifting and/or handling of the blocks.

FIG. 10 of the drawings illustrates one suitable technique discovered in accordance with this invention for providing releasable means to the band means such that the strap or handle may be released from the salt block upon the termination of handling and/or lifting of the block. In particular the releasable means shown in FIG. 10 is comprised of a welded, bonded, or adhered area 7 which holds the two end portions 6*a* and 6*b* of the strap 6 together. FIG. 10 also illustrates a grippable tab-end member 9 which forms a portion of the upper tape end 6*a* as shown in FIG. 10, which tab 9 may be grasped by the fingers and pulled to release the holding action of the bonded together area 7, and also to thereby release the strap from the salt block after the block has been placed in position, or after handling or lifting of the block is terminated and it is desired to remove the strap 6 therefrom.

By the terminology releasable means as used herein it is meant to include any releasable means suitable for holding the above-described band means together if desired during lifting and handling of the salt blocks and with said releasable means being operable to be easily released if desired upon terminating the lifting and/or handling of the salt blocks described herein. One specific and preferred form of such releasable means is illustrated in FIG. 10. Other suitable forms would be buckling means, releasable connectors of one form or another, releasable links, or other like releasable means.

One particularly advantageous strap suitable for use as the band means in accordance with this invention has been discovered to be a 7/16-inch nylon strap or tape which satisfactorily can be affixed to the groove means of a salt block as described herein and then subsequently drawn tightly around the block from bottom to top. One such nylon tape which has been found suitable (commercially designated Dymax) has a tensile strength exceeding 400 pounds; and, this tape can be secured in place by a tension weld-sealing system (for example a friction weld). When the weld is made a small overlap of approximately ¼ of an inch is left unwelded such that this ¼ of an inch area acts as a tab portion which can be grasped by the hand and pulled to release the tape from the salt block by peeling back the approximate 1 to 1½ inch bonded area which holds the tape in position.

The advantages of the invention should be clearly apparent from the disclosure set forth hereinabove.

What is claimed is:

1. A compressed sodium chloride salt block for use as a salt source for animals, or for brine-making in water-conditioning units, or like uses requiring such salt blocks, comprising:

a compressed block of sodium chloride salt,

band means generally around said block and particularly adapted for being grasped manually for lifting and handling of the block

recess means on the surface of said block operative to provide a free space between the body of the block and a surface on which it is to be supported and operative to generally facilitate retaining of said band means in position on the block

said band means including,

releasable means holding said band means together as desired during lifting and handling of the block and operable to be generally easily released if desired upon terminating said lifting and handling of the block,

said band means being comprised of nylon tape,

said band means being capable of removal from the block by grasping of tab means positioned on the band means and pulling the tab means to disjoin the tape,

said nylon tape being secured in place by a friction weld seal between overlapping portions of the tape, with a small area of said overlapping portions being left unwelded to form the tab means.

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