June 26, 1962 D. L. BOLLEFER 3,040,545

ICE CUBE MAKING MACHINE

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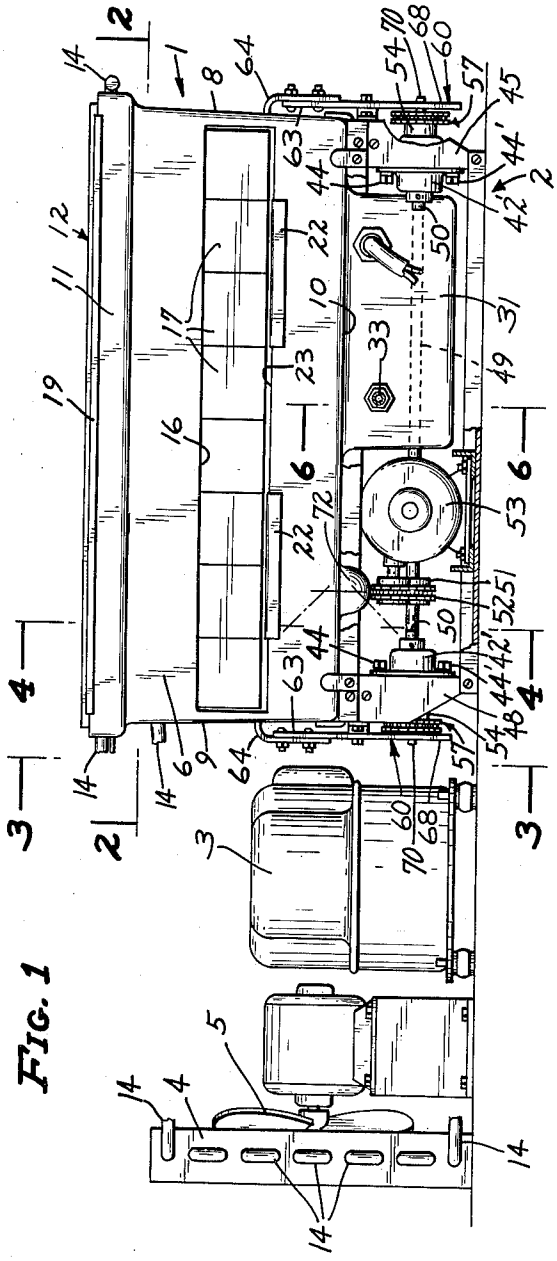


FIG. 1

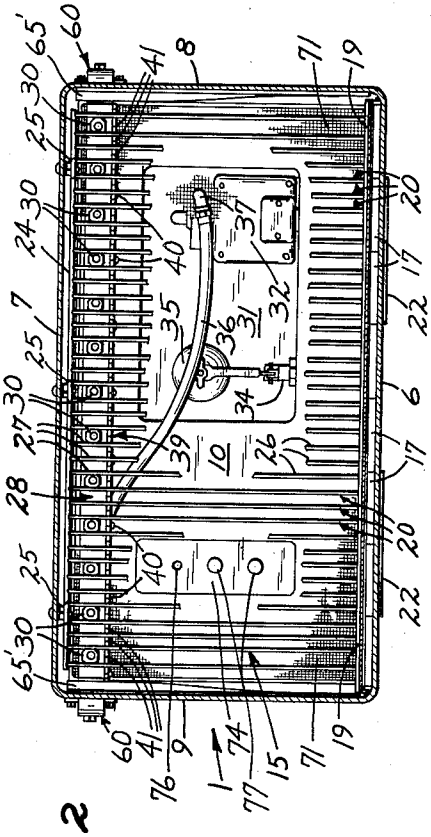


FIG. 2

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FIG. 3

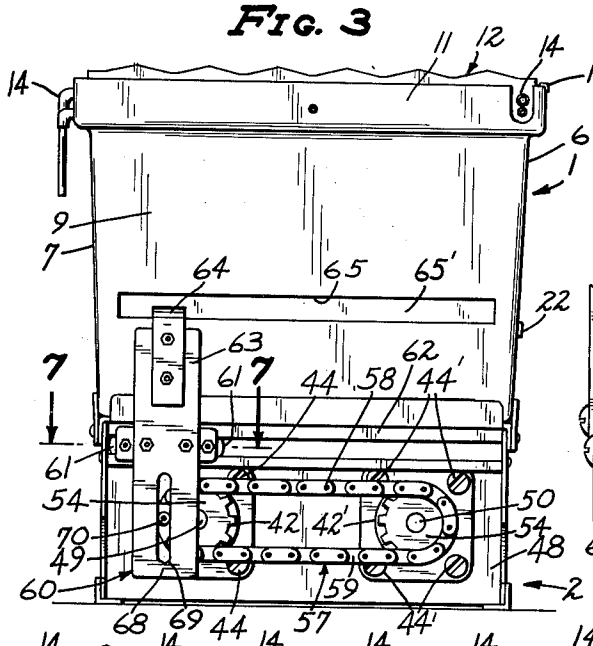
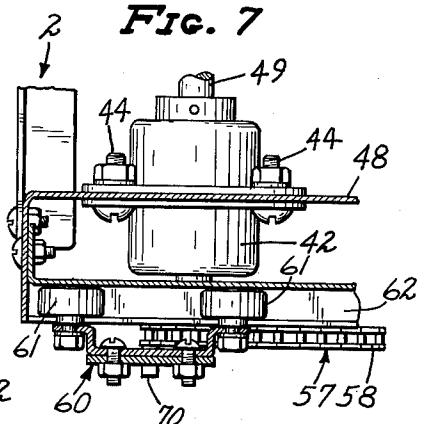


FIG. 7



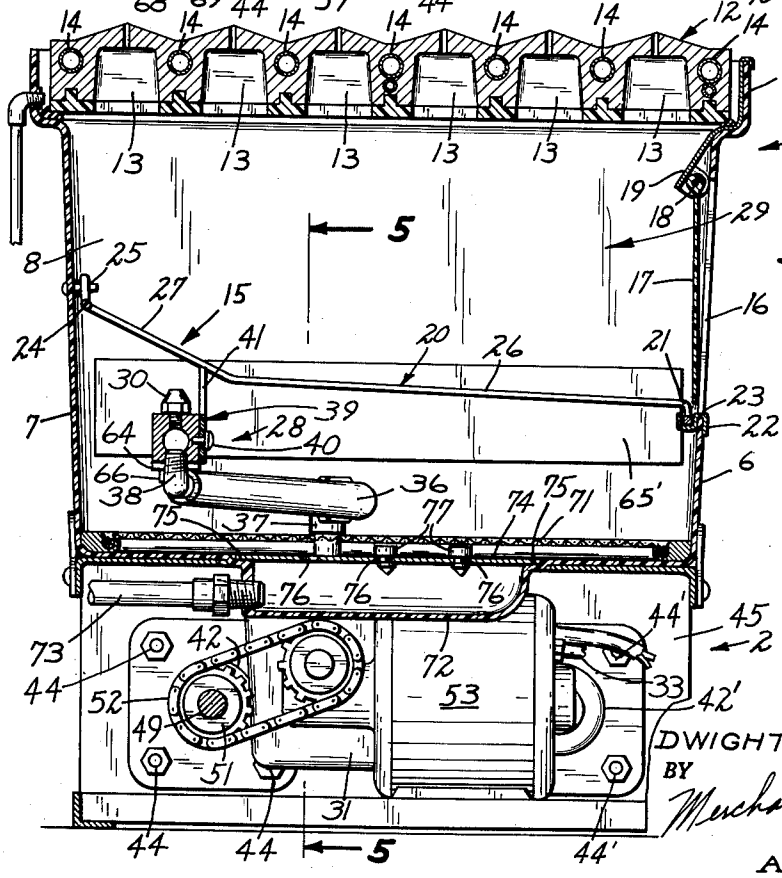


FIG. 4

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FIG. 5

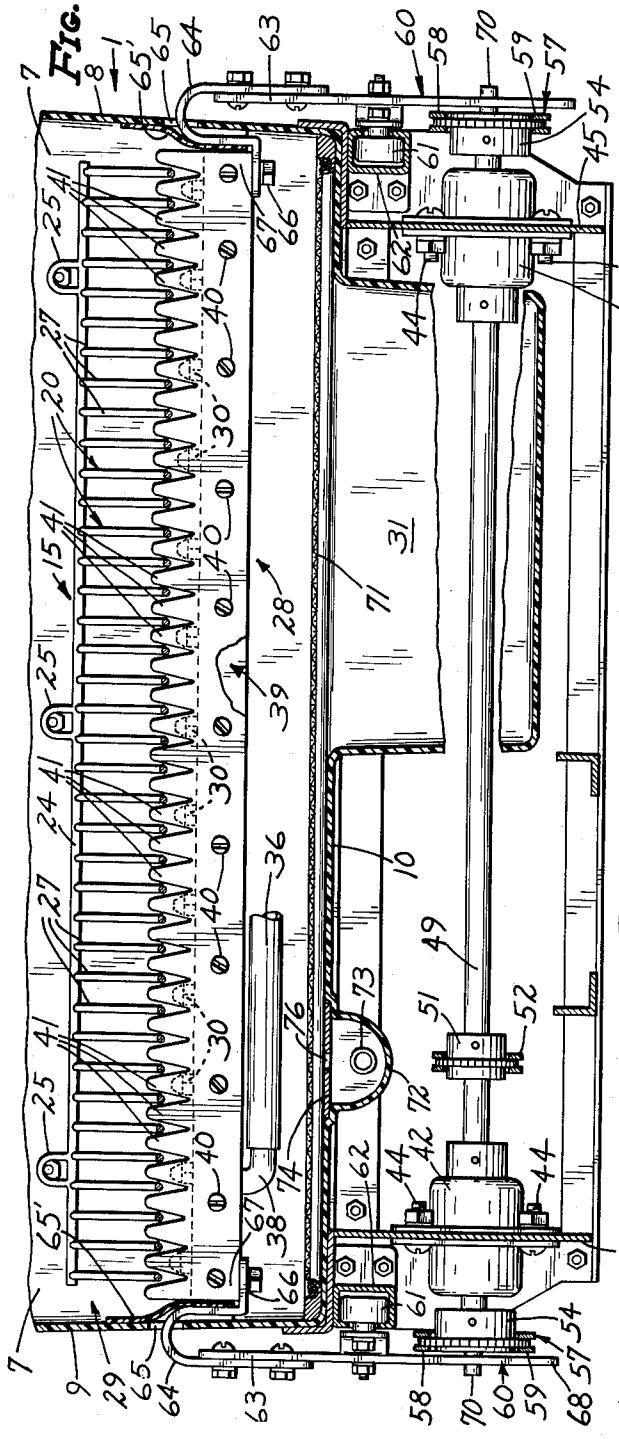
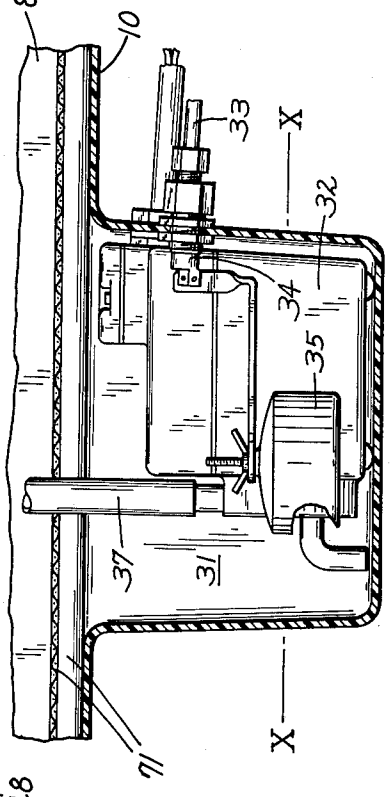


FIG. 6



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3,040,545

ICE CUBE MAKING MACHINE

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Filed June 26, 1961, Ser. No. 119,710
10 Claims. (Cl. 62—340)

This invention relates generally to ice cube making machines, and more particularly it relates to improvements for use with such machines of the type having a spraying chamber wherein water is sprayed into a freezing mold at the top of said chamber so as to cause the cells of the freezing mold to gradually become filled with ice in order to form the ice cubes.

Ice machines of the class described above have generally been provided with means for harvesting the ice cubes after they have been formed within the freezing mold, and an example thereof is means for reversing the refrigeration cycle so that the temperature of the freezing mold is temporarily raised whereby the released ice cubes are permitted to fall upon a horizontal rack disposed in underlying spaced relationship to the freezing mold. An important object of this invention is the provision of an ice cube making machine having novel means for raking or sweeping the ice cubes which fall upon the harvesting rack so as to propel the ice cubes in a generally horizontal direction across the harvesting rack toward an ice cube outlet opening defined in the freezing chamber of the ice machine.

Another object of this invention is the provision of an improved ice cube making machine in which said novel means for raking or sweeping the ice cubes across the harvesting rack of said machine, although being relatively simple in construction, is characterized by highly efficient operation.

Another object of this invention is the provision of an improved ice cube making machine in which said novel means for raking or sweeping the ice cubes is so designed and constructed as to permit an appreciable reduction in the size of the complete machine without sacrificing operating efficiency and production capability of the machine.

A still further object of this invention is the provision of an ice cube making machine having improved means for imparting reciprocation to a spray head disposed in underlying spaced relationship to the freezing mold of the machine, and in which said improved reciprocating means is so designed and constructed as to greatly reduce wear and maintenance costs resulting from long periods of operation of the machine.

A still further object of this invention is the provision of an ice cube making machine having improved means for continuously removing a portion of the liquid sprayed in the spraying chamber of the machine so as to prevent an over-concentration of impurities in the liquid from which the ice cubes are produced.

The above and still further objects and advantages of this invention will become apparent from the following detailed specification, appended claims and attached drawings.

Referring to the drawings, wherein like reference characters indicate like parts or elements throughout the several views:

FIG. 1 is a view in side elevation of this invention;

FIG. 2 is a view in horizontal section taken on the line 2—2 of FIG. 1;

FIG. 3 is an enlarged view in vertical section taken on the line 3—3 of FIG. 1;

FIG. 4 is a further enlarged view in vertical section taken on the line 4—4 of FIG. 1;

FIG. 5 is a view in vertical section taken on the line 5—5 of FIG. 4;

FIG. 6 is an enlarged view in vertical section taken on the line 6—6 of FIG. 1; and

FIG. 7 is an enlarged view in horizontal section taken on the line 7—7 of FIG. 3.

Referring with greater particularity to the drawings, the reference numeral 1 represents an upper cabinet in its entirety, which is supported by a lower frame structure, represented generally by the reference numeral 2. The lower frame structure 2 supports conventional refrigeration apparatus including a compressor 3, a condenser 4, and a fan 5 for the condenser 4. The refrigeration apparatus may be of any well known and readily available type, and since it in itself does not comprise the instant invention, further showing and description thereof is omitted. The upper cabinet 1 comprises side walls 6, 7, end walls 8, 9, and a bottom wall 10. The upper marginal edges of the side and end walls 6—9 of the upper cabinet 1 define a peripheral flange 11, which supports a freezing mold 12. The freezing mold 12 comprises a plurality of substantially straight parallel rows of inverted freezing cells 13 for forming the ice cubes. The freezing mold 12 may be of the type disclosed in my co-pending application, Serial Number 65,829, entitled "Freezing Mold for Ice Cube Making Machines." The freezing mold 12 includes an evaporator coil 14 which is carried by the freezing mold 12 and which is disposed intermediate the rows of freezing cells 13 defined by the freezing mold 12. The evaporator coil 14 is suitably connected to the previously described refrigeration apparatus and further arranged and controlled so as to freeze the water sprayed into the inverted freezing cells 13 and thereby form ice cubes.

It is understood that the refrigeration apparatus previously noted includes the usual means for reversing the refrigeration cycle so that the temperature of the freezing mold is temporarily raised so as to permit the release of the previously formed ice cubes. For the purpose of catching the ice cubes released from the freezing cells 13 of the freezing mold 12, a harvesting rack, represented generally by the reference numeral 15, is disposed in underlying spaced relationship to the freezing mold 12. As seen particularly in FIGS. 1 and 4, an ice cube outlet opening 16 is defined in the side wall 6 of the upper cabinet 1, the same being provided with a plurality of generally aligned door plates 17 which are hingedly connected, as at 18, to an elongated bracket 19 carried by the peripheral flange 11 of the upper cabinet 1. The harvesting rack 15 comprises a plurality of generally horizontally disposed elongated rods or bars 20 which are generally horizontally spaced in general parallelism with one another. The rods or bars 20 of the rack 15 will hereinafter be referred to merely as rods, although it should be understood that the provision by any suitable construction of a rack having generally parallel rods or bars is intended to fall within this definition. One side portion 21 of the harvesting rack 15 is carried by an elongated generally cross-sectionally S-shaped clip brackets 22 which are secured to the bottom edge 23 which defines the ice cube outlet opening 16. See FIG. 4. As shown in FIGS. 4 and 5, the other side portion 24 of the harvesting rack 15 is secured, as at 25, to the side wall 7 of the upper cabinet 1.

Referring particularly to FIG. 4, the portion of the elongated rods 20 disposed adjacent the ice cube outlet opening 16 define generally laterally aligned lower portions 26 which are inclined slightly upwardly from the side wall 6 of the cabinet 1 which defines the ice cube outlet opening 16 toward the other side wall 7 of the cabinet 1. At the other side of the harvesting rack 15, the elongated rods 20 define generally laterally aligned upper portions 27 which extend angularly upwardly from the lower portions 26 of the rods 20 toward the side wall 7 of the cabinet 1, it being noted that the

upper portions 27 of the elongated rods 20 are inclined at an appreciably greater angle than the angle of inclination of the lower portions 26 of the elongated rods 20.

An elongated generally tubular generally horizontal spray head, represented generally by the reference numeral 28, extends across a spraying chamber 29 defined by the upper cabinet 1. The elongated spray head 28 is disposed in underlying spaced relationship to the harvesting rack 15, and is adapted to force a liquid in an upwardly directed spray. The elongated spray head 28 extends in a direction generally normal to the direction of extension of the elongated rods 20 of the harvesting rack 15. The spray head 28 is provided with a plurality of longitudinally spaced nozzles 30 for directing liquid from the spray head 28 upwardly toward the several rows of freezing cells 13. Means, which will be hereinafter particularly described, is also provided for imparting reciprocating movements to the spray head 28 in the direction of extension of the elongated rods 20 of the rack 15 and between positions adjacent the opposite side walls 6, 7 of the upper cabinet 1. As seen particularly in FIGS. 1, 2, 5 and 6, a sump or liquid reservoir 31 is defined in the bottom wall 10 of the cabinet 1, the same being provided with a pump 32, a water inlet conduit 33, a valve 34, and a float control 35 for the valve 34. The float control 35 maintains the water level within the liquid reservoir 31 at approximately the line X—X of FIG. 6. A flexible conduit 36 is secured by a pivotal connection 37 to the outlet end of the pump 32 and a pivotal connection 38 at the inlet of the spray head 28.

As disclosed particularly in FIGS. 4 and 5, an elongated rake member, represented generally by the reference numeral 39, is secured by means of fasteners 40 to the spray head 28 and extends in general parallelism therewith. The rake member 39 comprises a plurality of longitudinally spaced upstanding raking fingers 41 each of which is disposed in general vertical alignment with a different one of the spaces defined between adjacent pairs of the elongated rods 20 of the harvesting rack 15. In accordance with my invention, means is provided for imparting reciprocatory movements to the spray head 28 and the rake member 39 in a direction generally longitudinally of the rows of freezing cells 13, which is also in the direction of extension of the elongated rods 20 of the harvesting rack 15. The reciprocating mechanism for mounting and powering the spray head 28 and the rake member 39 for said reciprocatory movements comprises a pair of pillow block bearing units 42 secured by fasteners 44 in axially spaced relationship and one each disposed in each of the end walls 45, 46 of the lower frame structure 2. Another pair of pillow block bearing units 42 are secured in axially spaced relationship and one each disposed in each of the end walls 45, 46 of the lower frame structure 2 by suitable fasteners 44', the same being laterally spaced from the first described pair of pillow block bearing units 42, and each carrying a stub shaft 50. See particularly FIGS. 3—5. A shaft 49 extends between the pillow block bearing units 42, and the shaft 49 is provided with an intermediately spaced drive wheel 51 which is connected by means of a drive chain 52 to a drive motor 53. Referring particularly to the reciprocating mechanism at one end of the machine, the same comprises a pair of sprocket wheels or rotary elements 54 disposed in horizontally spaced relationship and with their axes in general parallelism with one another, the sprocket wheels 54 being one each secured on the ends of the shafts 49, 50. It is noted that the spacing between the opposite outer edges of the sprocket wheels 54 is generally equal to the length of reciprocation which must be traversed by the spray head 28.

An endless flexible transmission member of chain 57 is entrained around both of the sprocket wheels 54 so as to provide generally vertically spaced upper and lower horizontal portions 58, 59 thereof which extend between the sprocket wheels 54. A generally vertically disposed reciprocating bracket 60 is disposed adjacent to and outwardly of the end of the upper cabinet 1 and the lower frame structure 2. The reciprocating bracket 60 is provided with guide wheels 61 which are received for rolling movement within an elongated channel member 62 which is secured to the lower frame structure 2, as shown particularly in FIGS. 5 and 7. The bracket 60 includes an upper portion 63 to which is secured an inwardly extending arm 64 which projects through a generally horizontally extending slot 65 defined in the end wall 8 of the cabinet 1, the arm 64 being secured, as at 66, to the end portion 67 of the spray head 28. A flexible elongated cover flap 65' is suitably secured to each of the end walls 8, 9 adjacent the slots 65.

The reciprocating bracket 60 also defines a lower plate portion 68 which is disposed adjacent the chain-equipped sprocket wheels 54 and in general parallelism with the plane defined thereby. The lower plate portion 68 of the bracket 60 defines an elongated generally vertically extending slot 69. It is noted that the slot 69 is of a vertical length greater than the vertical spacing between the upper and lower horizontal portions 58, 59 of the chain 57, the slot 69 being generally laterally aligned with said chain 57. A laterally extending follower element 70 is secured to the chain 57 and extends into the slot 69 defined by the lower plate portion 68 of the bracket 60, the follower element 70 being adapted to impart reciprocation to the bracket 60, and therefore the rake member-equipped spray head 28, upon rotation of the shaft 49 and the chain 57. It is noted that the reciprocating mechanism disposed at the other end of the machine is substantially identical to that described immediately above and is therefore provided with like reference numerals in the drawings.

It is noted that a generally rectangular screen 71 is disposed adjacent the bottom wall 10 of the upper cabinet 1, the same being for the purpose of filtering any chemical salt deposits or impurities which it is desired to remove from the recirculated spray liquid. Further in accordance with my invention, a relatively small receptacle is dependingly formed in the bottom wall 10 of the cabinet 1, as seen particularly in FIGS. 2, 4 and 5. The receptacle 72 is disposed so as to receive a portion of the liquid delivered from the spray head 28 and thereafter remove a portion of said liquid from the spraying system so as to periodically remove some of the chemical salts or other impurities which naturally become concentrated in the spraying liquid. The receptacle 72 therefore defines a drain 73 for disposing of the liquid collected thereby, and a cover plate 74 is removably positioned on a small ledge 75 defined perimetrically around the top of the receptacle 72. Also, the cover plate 74 defines a plurality of apertures 76 which are adapted to selectively and removably receive one of the plugs 77 so as to provide means for regulating the quantity of liquid which will be received within the receptacle 72. It will be appreciated that if the water used in this machine is of the type containing a substantial amount of salts and other impurities, it may be necessary to remove all of the plugs 77; however, with varying degrees of salts and other impurities, the plugs 77 may be inserted or removed in order to keep the water recirculated by the spray head 28 at a composition sufficient to not retard the freezing process.

Having specifically described this invention, the operative simplicity thereof is thought to be easily understandable. However, it might be well to note with respect to FIG. 4, that the above described reciprocating mechanism imparts reciprocation to the spray head 28 and also to the raking figers 41 carried thereby so that the raking fingers 41 move between a position wherein they are one each disposed between the lower portions 26 of adjacent pairs of the elongated rods 20 of the harvesting rack 15 and project upwardly thereabove so as to engage ice cubes disposed on said rack 15 and a position wherein

said raking fingers 41 are disposed below the upper portions 27 of the rods 20 whereby to move the ice cubes released from the freezing mold 12 toward the ice cube outlet opening 16 upon reciprocation of the spray head 28. Referring particularly to FIG. 4, it will be noted that when the raking fingers 41 and the spray head 28 are positioned adjacent the ice cube outlet opening 16, the raking fingers projects substantially above the elongated rods 20, and movement of the raking fingers 41 toward the side wall 7 of the cabinet 1 will move any ice cubes laying on the harvesting rack 15 toward the upper portions 27 of the elongated rods 20, whereupon the subsequent movement of the raking fingers 41 to a position, which is adjacent the side wall 7 of the cabinet 1 (see FIG. 4) wherein the raking fingers 41 are disposed below the inclined upper portions 27 of the rods 20, permits the ice cubes to slide down the inclined upper portions 27 of the rods 20. Then, upon movement of the spray head 28 and the raking fingers 41 carried thereby from the above described position thereof adjacent the side wall 7 of the cabinet 1 toward the ice cube outlet opening 16, the raking fingers 41 engage the ice cubes now on the lower portions 26 of the rods 20 and move the same toward the ice cube outlet opening 16, whereupon the ice cubes are dispelled from the machine. It is believed that other aspects of the operation of this invention are easily ascertainable from the above description of this invention.

This invention has been thoroughly tested and found to be completely satisfactory for the accomplishment of the above objects; and while I have shown and described above a preferred embodiment thereof in which the principles of the present invention have been incorporated, I wish it to be specifically understood that the same may be modified without departure from the scope and spirit of the appended claims.

What I claim is:

1. In an ice cube making machine of the type having a spraying chamber the top of which is defined by a generally horizontally disposed freezing mold for forming the ice cubes and in which said machine has an ice cube outlet opening leading from said chamber, a harvesting rack disposed in underlying spaced relationship to said freezing mold, said harvesting rack comprising a plurality of elongated rods generally horizontally spaced in general parallelism with one another, said rods of said rack having generally laterally aligned lower portions disposed adjacent said ice outlet opening and also having generally laterally aligned upper portions disposed above said lower portions thereof, an elongated spray head extending across said chamber in underlying spaced relationship to said rack and adapted to force a liquid in an upwardly directed spray into said freezing mold, means mounting and powering said spray head for reciprocatory movements in the direction of extension of the rods of said rack and between opposite sides of said rack, a plurality of upstanding raking fingers secured to said spray head in longitudinally spaced relationship with respect thereto and being one each disposed in general vertical alignment with the spaces between adjacent pairs of the elongated rods of said rack, means for releasing formed ice cubes from within said freezing mold, and said raking fingers reciprocating with said spray head whereby said raking fingers are moved between a position wherein they are one each disposed between said lower portions of adjacent pairs of said rods and project upwardly thereabove so as to engage ice cubes disposed on said rack and a position wherein said raking fingers are disposed below said upper portions of said rods whereby to move the ice cubes released from said freezing mold toward said ice cube outlet opening upon reciprocation of said spray head.

2. In an ice cube making machine of the type having a spraying chamber the top of which is defined by a generally horizontally disposed freezing mold for forming

the ice cubes and in which said machine has an ice cube outlet opening leading from said chamber, a harvesting rack disposed in underlying spaced relationship to said freezing mold, said harvesting rack comprising a plurality of elongated rods generally horizontally spaced in general parallelism with one another, said rods at one side of said rack having generally laterally aligned lower portions disposed adjacent said ice cube outlet opening, said rods at the other side of said rack extending generally angularly upwardly to define generally laterally aligned upper portions disposed above said lower portions thereof, an elongated spray head extending across said chamber in underlying spaced relationship to said rack and generally normal to the direction of extension of said rods of said rack, said spray head being adapted to force a liquid in an upwardly directed spray, means mounting and powering said spray head for reciprocatory movements in the direction of extension of the rods of said rack and between opposite sides of said rack, a plurality of upstanding raking fingers secured to said spray head in longitudinally spaced relationship with respect thereto and being one each disposed in general vertical alignment with the spaces between adjacent pairs of the elongated rods of said rack, means for releasing formed ice cubes from within said freezing mold, and said raking fingers reciprocating with said spray head whereby said raking fingers are moved between a position wherein they are one each disposed between said lower portions of adjacent pairs of said rods and project upwardly thereabove so as to engage ice cubes disposed on said rack and a position wherein said raking fingers are disposed below said upper portions of said rods whereby to move the ice cubes released from said freezing mold toward said ice cube outlet opening upon reciprocation of said spray head.

3. The structure defined in claim 2 in which said raking fingers are formed of a flexible plastic material.

4. In an ice cube making machine of the type having a spraying chamber the top of which is defined by a generally horizontally disposed freezing mold for forming the ice cubes and in which said machine has an ice cube outlet opening leading from said chamber, a harvesting rack disposed in underlying spaced relationship to said freezing mold, said harvesting rack comprising a plurality of elongated rods generally horizontally spaced in general parallelism with one another, said rods at one side of said rack having generally laterally aligned lower portions disposed adjacent said ice cube outlet opening, said rods at the other side of said rack extending generally angularly upwardly to define generally laterally aligned upper portions disposed above said lower portions thereof, an elongated spray head extending across said chamber in underlying spaced relationship to said rack and generally normal to the direction of extension of said rod of said rack, said spray head being adapted to force a liquid in an upwardly directed spray into said freezing mold, means mounting and powering said spray head for reciprocatory movements in the direction of extension of the rods of said rack and between opposite sides of said rack, an elongated rake member secured to said spray head and extending in general parallelism therewith, said rake member comprising a plurality of longitudinally spaced upstanding raking fingers each of which is disposed in general vertical alignment with the spaces between adjacent pairs of the rods of said rack, means for releasing formed ice cubes from within said freezing mold, and said rake member reciprocating with said spray head whereby said raking fingers are moved between a position wherein they are one each disposed between said lower portions of adjacent pairs of said rods and project upwardly thereabove so as to engage ice cubes disposed on said rack and a position wherein said raking fingers are disposed below said upper portions of said rods whereby to move the ice cubes released

from said freezing mold toward said ice cube outlet opening upon reciprocation of said spray head.

5. The structure defined in claim 4 in which said rake member is formed of a flexible plastic material.

6. In an ice cube making machine of the type having a spraying chamber the top of which is defined by a generally horizontally disposed freezing mold for forming the ice cubes and in which said machine has an ice cube outlet opening leading from said chamber; a harvesting rack disposed in underlying spaced relationship to said freezing mold; said harvesting rack comprising a plurality of elongated rods generally horizontally spaced in general parallelism with one another; said rods of said rack having generally laterally aligned lower portions disposed adjacent said ice outlet opening and also having generally laterally aligned upper portions disposed above said lower portions thereof; an elongated spray head extending across said chamber in underlying spaced relationship to said rack and adapted to force a liquid in an upwardly directed spray into said freezing mold; means mounting and powering said spray head for reciprocatory movements in the direction of extension of the rods of said rack and between opposite sides of said rack; said means for mounting and powering said spray head comprising a pair of rotary elements disposed in horizontally spaced relationship and with their axes in general parallelism with one another, the spacing between the opposite outer edges of said rotary elements being generally equal to the length of reciprocation traversed by said spray head, means imparting rotation to one of said rotary elements, an endless flexible transmission member entrained around both of said rotary elements so as to provide generally vertically spaced horizontal portions thereof which extend between said rotary elements, a generally vertically disposed reciprocating bracket rigidly secured to said spray head, said bracket having a plate portion disposed adjacent said transmission member-equipped rotary elements and in general parallelism with the plane defined thereby, the plate portion of said bracket defining an elongated vertical slot extending generally normal to the direction of reciprocation of said spray head, said slot being of a vertical length greater than the vertical spacing between said spaced horizontal portions of said flexible transmission member and also being generally laterally aligned therewith, and a laterally extending follower element secured to said flexible transmission member and extending into the slot of said bracket and adapted to impart reciprocation to said bracket and said spray head upon rotation of said flexible transmission member; a plurality of upstanding raking fingers secured to said spray head in longitudinally spaced relationship with respect thereto and being one each disposed in general vertical alignment with the spaces between the adjacent pairs of the elongated rods of said rack; means for releasing formed ice cubes from within said freezing mold; and said raking fingers reciprocating with said spray head whereby said raking fingers are moved between a position wherein they are one each disposed between said lower portions of adjacent pairs of said rods and project upwardly thereabove so as to engage ice cubes disposed on said rack and a position wherein said raking fingers are disposed below said upper portions of said rods whereby to move the ice cubes released from said freezing mold toward said ice cube outlet opening upon reciprocation of said spray head.

7. In an ice cube making machine of the type having refrigeration apparatus and harvesting means for collecting the ice cubes; a cabinet structure which defines a spraying chamber; a generally horizontally disposed freezing mold for forming the ice cubes and disposed at the top of said spraying chamber; said freezing mold having a plurality of substantially straight parallel rows of inverted freezing cells; an elongated spray head extending across said chamber in underlying spaced relationship to said freezing mold and adapted to force a liquid in an upwardly directed spray into the freezing cells of said freezing mold; means mounting and powering said spray head for generally horizontally directed reciprocatory movements longitudinally of said rows of freezing cells; said means for mounting and powering said spray head comprising a pair of rotary elements disposed in horizontally spaced relationship and with their axes in general parallelism with one another, the spacing between the opposite outer edges of said rotary elements being generally equal to the length of reciprocation traversed by said spray head, means imparting rotation to one of said rotary elements, an endless flexible transmission member entrained around both of said rotary elements so as to provide generally vertically spaced horizontal portions thereof which extend between said rotary elements, a generally vertically disposed reciprocating bracket rigidly secured to said spray head, said bracket having a plate portion disposed adjacent said transmission member-equipped rotary elements and in general parallelism with the plane defined thereby, the plate portion of said bracket defining an elongated slot extending generally normal to the direction of reciprocation of said spray head, said slot being of a vertical length greater than the vertical spacing between said spaced horizontal portions of said flexible transmission member and also being generally laterally aligned therewith, and a laterally extending follower element secured to said flexible transmission member and extending into the slot of said bracket and adapted to impart reciprocation to said bracket and said spray head upon rotation of said flexible transmission member.

8. In an ice cube making machine of the type having a spraying chamber the top of which is defined by a generally horizontally disposed freezing mold for forming the ice cubes and in which said machine has an ice cube outlet opening leading from said chamber, a generally horizontal harvesting rack disposed in underlying spaced relationship to said freezing mold and generally adjacent said ice outlet opening, an elongated spray head extending across said chamber in underlying spaced relationship to said rack and adapted to force a liquid in an upwardly directed spray into said freezing mold, means mounting and powering said spray head for reciprocatory movements between opposite sides of said rack, a plurality of generally vertically disposed raking fingers carried by said spray head in longitudinally spaced relationship with respect thereto, means for releasing formed ice cubes from within said freezing mold, and said raking fingers being disposed adjacent said rack and reciprocating with said spray head so as to engage ice cubes disposed on said rack whereby to move the ice cubes released from said freezing mold toward said ice cube outlet opening upon reciprocation of said spray head.

9. In an ice cube making machine of the type having a spraying chamber the top of which is defined by a generally horizontally disposed freezing mold for forming the ice cubes and in which said machine has an ice cube outlet opening leading from said chamber, a generally horizontal harvesting rack disposed in underlying spaced relationship to said freezing mold and generally adjacent the ice outlet opening, said harvesting rack comprising a plurality of elongated rods generally horizontally spaced in general parallelism with one another, an elongated spray head extending across said chamber in underlying spaced relationship to said rack and adapted to force a liquid in an upwardly directed spray into said freezing mold, means mounting and powering said spray head for reciprocatory movements between opposite sides of said rack, a plurality of generally vertically disposed raking fingers carried by said spray head in longitudinally spaced relationship with respect thereto and being one each disposed in general vertical alignment with a different one of the spaces between adjacent pairs of the elongated rods of said rack, means for releasing formed ice cubes from within said freezing mold, and said raking

fingers being disposed adjacent said rack and reciprocating with said spray head so as to engage ice cubes disposed on said rack whereby to move the ice cubes released from said freezing mold toward said ice outlet opening upon reciprocation of said spray head.

10. In an ice cube making machine of the type having refrigeration apparatus and harvesting means for collecting the ice cubes; a cabinet structure having opposite end walls and which cabinet defines a spraying chamber; a generally horizontally disposed freezing mold for forming the ice cubes and disposed at the top of said spraying chamber; said freezing mold having a plurality of substantially straight parallel rows of inverted freezing cells; an elongated spray head extending across said chamber in underlying spaced relationship to said freezing mold and adapted to force a liquid in an upwardly directed spray into the freezing cells of said freezing mold; said spray head having opposite end portions disposed adjacent said end walls of said cabinet structure; a generally horizontally extending slot defined by one of said end walls of said cabinet structure; means mounting and powering said spray head for generally horizontally directed reciprocatory movements longitudinally of said rows of freezing cells; said means for mounting and powering said spray head comprising a pair of rotary elements mounted adjacent the outside of said one of said end walls of the cabinet structure and disposed in horizontally spaced relationship and with their axes in general parallelism with one another, the spacing between the opposite edges of said rotary elements being generally equal to the length of reciprocation traversed by said spray head, means imparting rotation to one of said rotary elements, an endless flexible transmission member entrained around both of said rotary elements so as to provide generally

vertically spaced horizontal portions thereof which extend between said rotary elements, a generally vertically disposed reciprocating bracket mounted adjacent said one of the end walls of said cabinet structure, a pair of horizontally spaced guide wheels rotatably secured to said reciprocating bracket with their axes in general parallelism with the axes of said rotary elements, an elongated generally horizontally extending channel member secured adjacent said one of the end walls of the cabinet structure, said guide wheels being received within said channel member for reciprocating rolling movement therewithin, said reciprocating bracket having an upper arm portion which extends through said slot in the end wall of said cabinet structure and is rigidly secured to the adjacent end portion of said spray head, said bracket also having a plate portion disposed adjacent said transmission member-equipped rotary elements and in general parallelism with the plane defined thereby, the plate portion of said brackets defining an elongated generally vertically extending slot, said slot of said bracket being of a vertical length greater than the vertical spacing between said spaced horizontal portions of said flexible transmission member and also being generally laterally aligned therewith, and a laterally extending follower element secured to said flexible transmission member and extending into the slot of said bracket and adapted to impart reciprocation to said bracket and said spray head upon rotation of said flexible transmission member.

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