Sept. 1, 1936. M. J. ULINE 2,052,908

CONVEYER

Filed Jan. 27, 1934 2 Sheets-Sheet 1

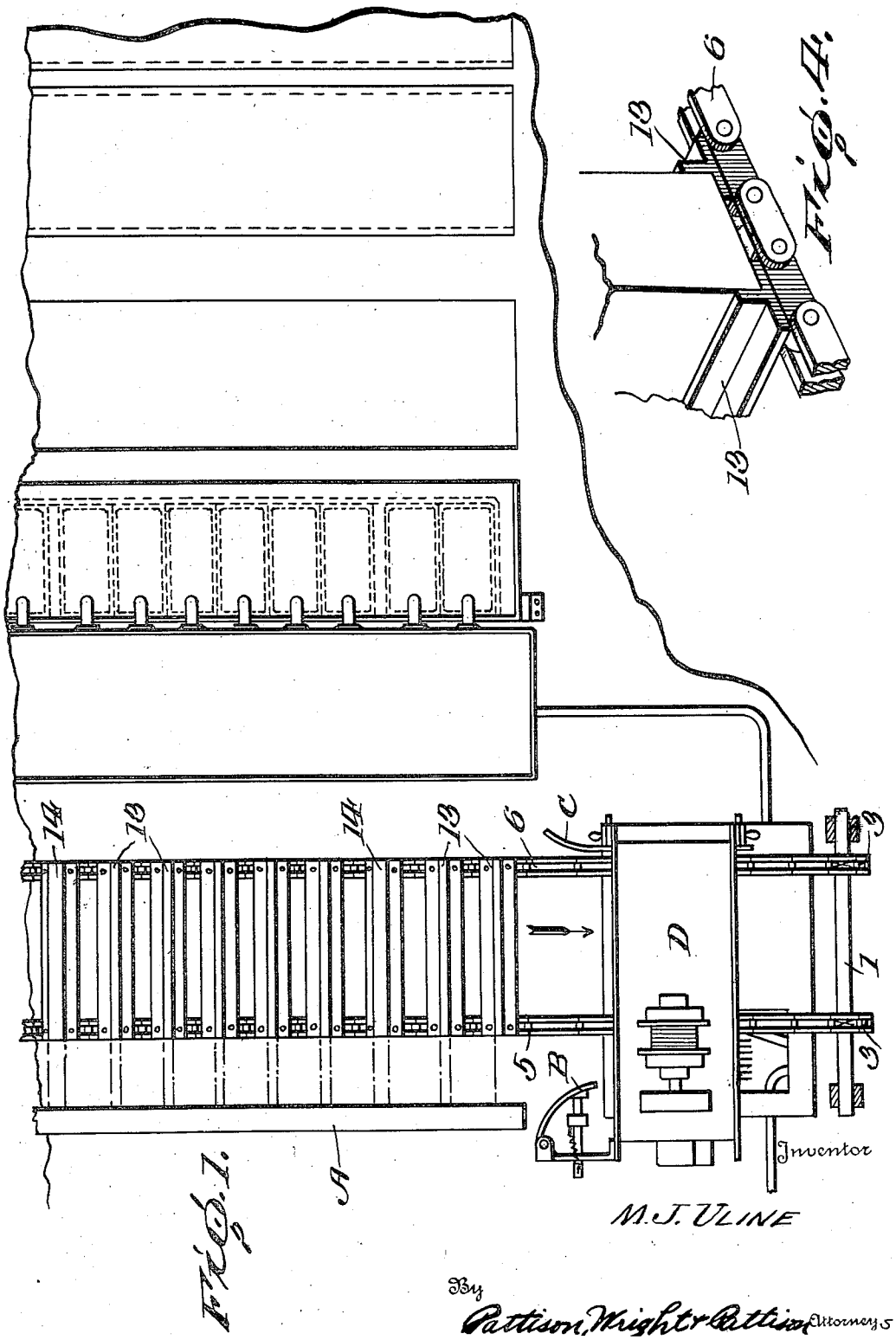


Fig. 1.

Fig. 4.

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CONVEYER

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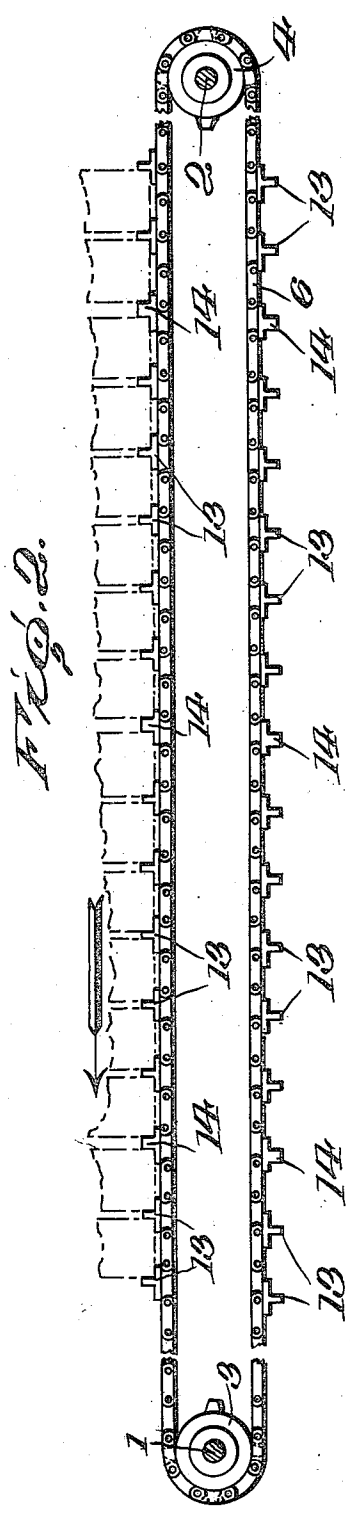


Fig. 2.

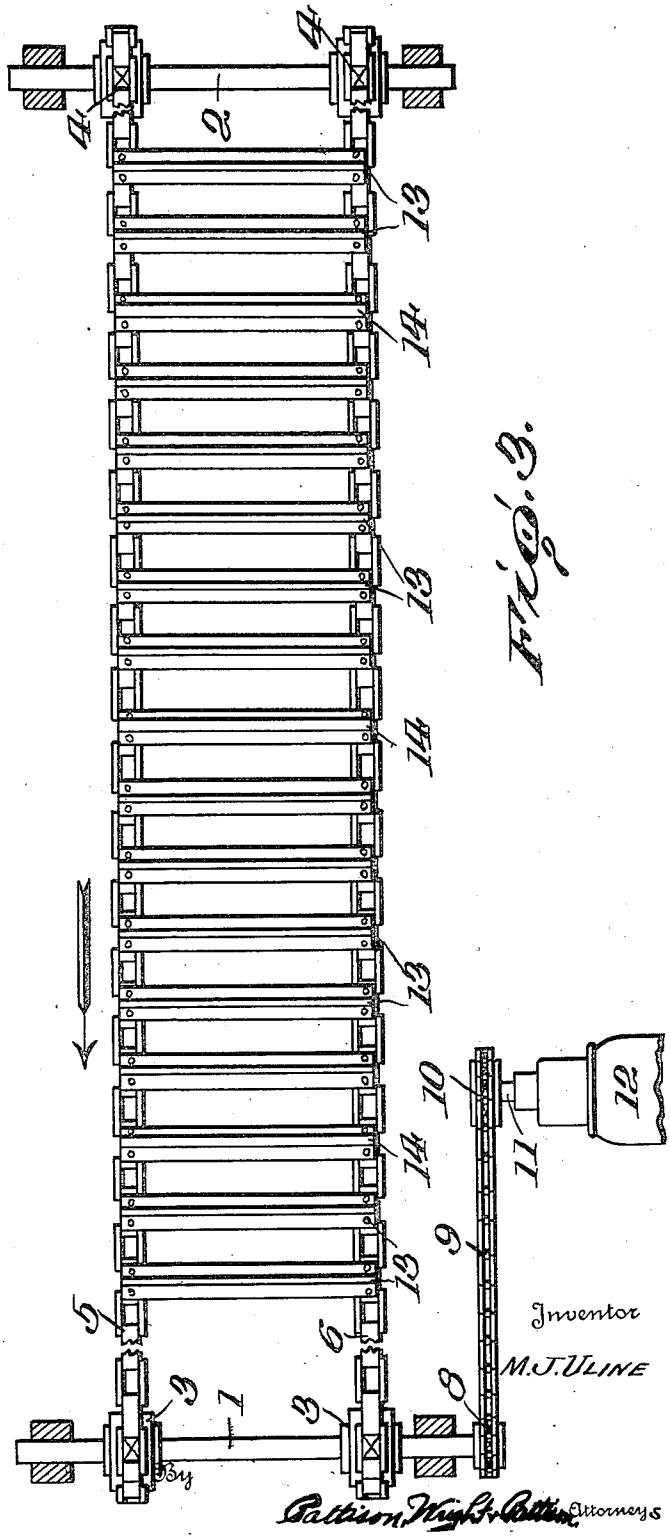


Fig. 1.

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Patented Sept. 1, 1936

2,052,908

UNITED STATES PATENT OFFICE

2,052,908

CONVEYER

Migiel J. Uline, Washington, D. C.

Application January 27, 1934, Serial No. 708,667

1 Claim. (Cl. 198—199)

This invention relates to certain new and useful improvements in a conveyer used in connection with my improved method of manufacturing oblong blocks of clear ice as disclosed in a companion application Serial No. 708,665 filed even date herewith.

In another companion application Serial No. 708,666 filed even date herewith I have shown a particular construction of cutting machine for cutting the ends of the blocks of ice off squarely in order to form rectangular blocks of clear ice of a predetermined size and the construction of conveyer as disclosed herewith is adapted to be used in connection with a machine for squaring the ends of cakes of ice.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claim.

In the drawings,

Figure 1 is a plan view of a conveyer constructed in accordance with my invention showing it in position in an ice plant to receive the cakes of ice from the cans from the dump;

Figure 2 is a longitudinal section through a conveyer constructed in accordance with my invention;

Figure 3 is a top plan view of the conveyer; and

Figure 4 is a detail perspective view showing a cake of ice in position on the inverted T-shaped irons so as to hold the same firmly when it is brought into engagement with the cutting head.

In constructing a conveyer in accordance with my invention, I employ a pair of shafts 1 and 2 provided with sprocket wheels 3 and 4 over which pass chains 5 and 6. The shafts 1 and 2 are mounted in suitable bearings 7 and the shaft 2 is provided with a sprocket wheel 8 over which passes a sprocket chain 9 carried by a sprocket wheel 10 secured on the shaft 11 of a geared electric motor 12 whereby the shafts can be driven slowly without a reducing gear box.

In the companion application Serial No. 708,665 filed even date herewith, I have shown a unit of cans arranged in a frame preferably sixteen in number and in order to allow these cans to be raised and lowered from a brine tank and dip tank and moved onto the dump, the cans are spaced apart at intervals, the spaces being connected together by supports which bridge the spaces in order to allow hooks to drop down and engage these supports, said hooks being preferably carried by a crane as clearly shown in my method and apparatus application executed even date herewith.

In constructing a conveyer to be used in connection with a cutting machine as disclosed in my companion application Serial No. 708,666 executed even date herewith, it is essential that the cakes of ice be supported firmly so as prevent the same from tilting when they are moved into engagement with the cutting heads and to accomplish this result, I employ inverted T-shaped irons 13 which are secured to the links of the chain by bolts or rivets.

In the construction of conveyer herein shown, I have shown the same constructed with two sets of sixteen compartments and I wish it to be clearly understood that it can be constructed with any desired number of compartments as the number of compartments will correspond to the number of cans in any unit used in freezing the ice.

The compartments formed by the angle irons provide means for holding the cakes or blocks firmly on the conveyer so as to prevent the blocks from slapping against one another and being injured when the conveyer is started and stopped. With this construction of conveyer perfect blocks of ice free from defects can be manufactured as I am able to handle these blocks in such a manner that all danger of the same being chipped or cracked by being knocked against one another is prevented.

Seventeen of these T irons are employed in order to form sixteen compartments and each compartment is positioned on the chain in such a manner as to receive the blocks of ice from the sixteen cans and as these cans are spaced apart at intervals, it is essential that some of the T irons be formed with enlarged stems or fillers as shown at 14. These T irons are positioned upon the upper and lower runs of the endless chains so as to form a space between one set and the other, which allows a set of sixteen cakes of ice to be moved through the cutting machine so that the conveyer can be stopped and the additional sixteen cakes of ice within the dump can be deposited on the other set of T irons and these cakes of ice set upon the base formed by the inverted T irons and the side walls are engaged by the stems of the T irons so as to firmly hold the blocks of ice in position to be operated on by the cutting machine and to prevent the blocks from slapping against one another whereby the blocks are prevented from tilting as they are moved into contact with the cutters and forced through the cutting machine.

By driving the conveyer with a geared electric motor, the movement of the conveyer can be manually or automatically controlled and when

used in connection with my method, the timing of the movement of the conveyer is such that the conveyer is at a standstill when the dump is operated so as to deposit the sixteen cakes of ice thereon and when the dump is moved back into vertical position, the conveyer can be automatically started.

In use a bumper is arranged alongside of the conveyer opposite to the dump so that as the blocks of ice slide out of the cans on the dump into the compartments of the conveyer, they will engage the bumper A which will position the blocks on the conveyer so that as the blocks are moved by the conveyer, they will be brought into engagement with the yieldable guide B which in turn will force the blocks into engagement with the adjustable gauge C so as to properly position the blocks of ice in respect to the cutting heads of the cutter D, all of which is clearly described in my companion application executed even date herewith.

While in the drawings I have shown a certain construction of chain for forming the conveyer, I wish it to be clearly understood that I do not wish to limit myself to the use of any particular construction of link in forming the chain as I am aware that various changes can be made without departing from the spirit of my invention, which consists in forming an endless conveyer with any number of compartments desired to receive and hold cakes of ice in position to have their ends cut off without any danger of the blocks slapping against one another.

From the foregoing description it will be seen that I have provided a conveyer with a plurality of compartments formed of inverted T irons to receive, support and hold rectangular cakes of ice on edge so that these cakes of ice can be moved into engagement with rotary cutters without any danger of the blocks of ice being tilted as the blocks are held firmly in the compartments and as the cutters are rotating in the direction of line of feed, downward pressure is exerted to hold the blocks in their proper position within the compartments and it will be noted that the blocks are allowed free endwise movement so that they can be properly positioned in respect to the cutting heads, whereby by adjusting the adjustable gauge any amount of the end can be cut off desired, but I have found in practice that by forming the cake of such a length that 3 or 4 inches can be cut off that a standard block of ice 46 inches long can be manufactured which will be free from the white end as now generally produced in ice manufacturing plants.

It will also be noted that this construction of conveyer is especially adapted to be used in connection with a particular construction of unit of cans wherein the frame for supporting the cans has the cans mounted therein in such a position that a space is left between certain of the cans to receive hooks of the crane and in order to have the compartments match the cans in the frame, certain angle irons are enlarged.

It will also be noted that by having the upper and lower runs each with a complete set of compartments that by the proper timing of the conveyer a set of sixteen blocks will be carried through the cutting machine and the additional compartments formed by the irons will have been brought into position to receive the cakes of ice from the cans wherein in manufacturing ice the conveyer is driven intermittently and when at a standstill, receives blocks of ice and supports these blocks on edge so that they can be conveyed through the cutting machine.

The rough or white end is commonly known in the art as a cup end of a cake of ice and the object of my invention is to remove this cup end of the ice in order to form a perfect cake free from all impurities.

What I claim is:

A conveyer comprising a pair of endless chains arranged parallel with one another formed of single and double links pivotally connected together, inverted T-shaped angle irons connecting said chains having heads of substantially the same length of the solid links and secured thereto with the stem of the T extending outwardly therefrom to form spaced supports to each side thereof, said angle irons being arranged in groups with a space between groups to provide blank portions in said conveyer whereby the material supported on the angle irons will be intermittently delivered.

MIGIEL J. ULINE.