E. BURGIN.

SKATING-RINK.

Patented Feb. 20, 1877.

No. 187,598.

Fig. 1.

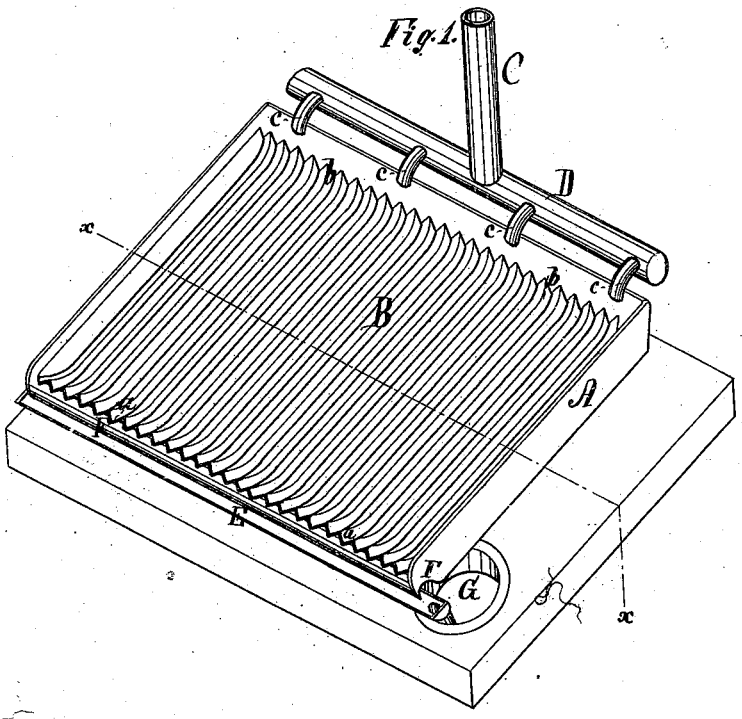
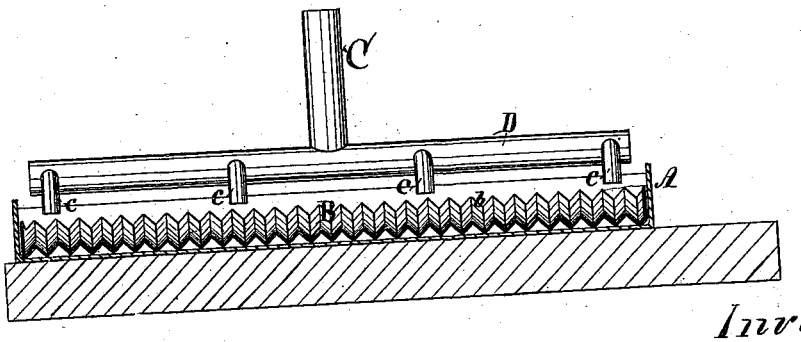


Fig. 3.

Fig. 4.

Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE

EMIL BÜRGIN, OF NEW YORK, N. Y.

IMPROVEMENT IN SKATING-RINKS.

Specification forming part of Letters Patent No. **187,598**, dated February 20, 1877; application filed January 27, 1877.

To all whom it may concern:

Be it known that I, EMIL BÜRGIN, now of the city, county, and State of New York, a citizen of the Republic of Switzerland, am the inventor of certain Improvements in Artificial-Ice Skating-Rinks, of which the following is a specification, reference being had to the drawings, forming part thereof, in which—

Figure 1 is a perspective view of the rink, on a small scale, embodying or representing my invention. Fig. 2 is a cross-section of the same on line *x x*, Fig. 1. Fig. 3 is an end view of the corrugated sheet, showing the corrugations made angularly; and Fig. 4 is also an end view of the corrugated sheet, showing the corrugations made curved.

My invention relates to skating-rinks in which the ice is produced by artificial means; and consists in a rink constructed with a floor, underlying the ice and overlying the refrigerating-reservoir, that is composed of corrugated metal, in the manner hereinafter particularly described.

A is a tank or basin of suitable dimensions for a skating-rink—length, depth, and breadth—to hold the refrigerating-fluid by which the artificial ice of the rink is to be produced. This is to be made, of course, water-tight, and, preferably of some material that shall have but little heat-conducting property. B is a floor or foundation of sheet metal, that is laid down upon the floor of the tank A. It is curved upward at each edge, of two sides, *a* and *b*, and is also either curved, as the two other sides or ends, or is furnished with side or inner walls, as shown in the drawings, so that the whole shall form a shallow water-tank or receptacle for the water which is to form the ice in the rink. This sheet is to be corrugated, as represented in the drawings, the corrugations running from one curved edge to the opposite ones, and they may be either angular, as shown in Fig. 3, or curved, as shown in Fig. 4, or in any other analogous form. As is evident, these corrugations form, as the sheet is laid on the bottom of the tank, channels through which water may flow from one side of the tank to the other, while the lower angle or curve of the corrugation rests on the bottom of the tank.

C is a pipe for inducting the refrigerating-fluid into the tank, and leads into the horizontal pipe D, through which and the branches *c c c c* the said fluid is distributed through the whole length of the tank, and is discharged into it at one side, between the curved edge of the corrugated plate B and the wall of the tank. E is a gutter or conductor arranged on the opposite side of the rink from the pipe C, and so placed as to receive and lead away the refrigerating-fluid as it overflows from the tank.

The floor of the tank on the side next the gutter is raised somewhat, as shown at F, and the elevation at this line should be sufficient to insure the complete filling of the channels underneath the plate B, made by the corrugations of said plate. The gutter E leads into a discharge-pipe or a reservoir, G, from which it is intended the fluid, after having passed through the tank and discharged its office of refrigerating, shall be pumped into a refrigerating apparatus, to be there cooled, and then returned through the pipe C, conductor D, again into the tank.

Any known apparatus for producing artificial cold may be employed to refrigerate the said fluid.

The water to form the ice of the rink is to be introduced in any suitable way into the rink and allowed to overflow the upper surface of the plate B, and should be of sufficient depth to fill the corrugations and extend somewhat above the upper angles or curves of the same.

The refrigerating-fluid may be salt water, or glycerine water, or any fluid which is congealed at a much lower temperature than water itself, so that when such fluid of lower temperature is brought into contact with the lower surface of the bed or plate B, it will conduct away the heat of the water lying on said plates, and thereby congeal it.

The advantages of a corrugated bed-plate or floor underlying the ice, and on which it is formed, are obvious. It may permit a free, uninterrupted flow of the refrigerating-fluid beneath it, and allows the said fluid to come into contact with the whole under surface of said plate or floor, excepting just along the line where the lower angles or curves rest on

the floor of the tank. It also gives a larger refrigerating-surface to the floor than would a plane plate. It also permits the said floor or plate to contract and expand under the varying temperature to which it is subjected in use without being broken or ruptured thereby; and it constitutes a very cheap and very simple, solid, firm foundation for the ice.

What I claim, and desire to secure by Letters Patent, is—

In a skating-rink, the tank A, the corrugated bed-plate B, and suitable inlet and outlet fluid-conductors, all constructed and combined to operate substantially as described.

Witness my hand this 22d day of January, 1877.

EMIL BÜRGIN.

Witnesses:
B. S. CLARK,
M. F. CLIFTON.