

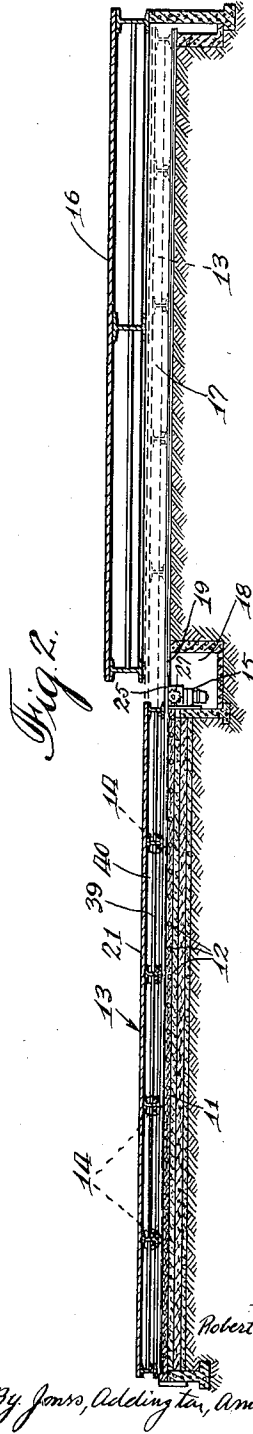
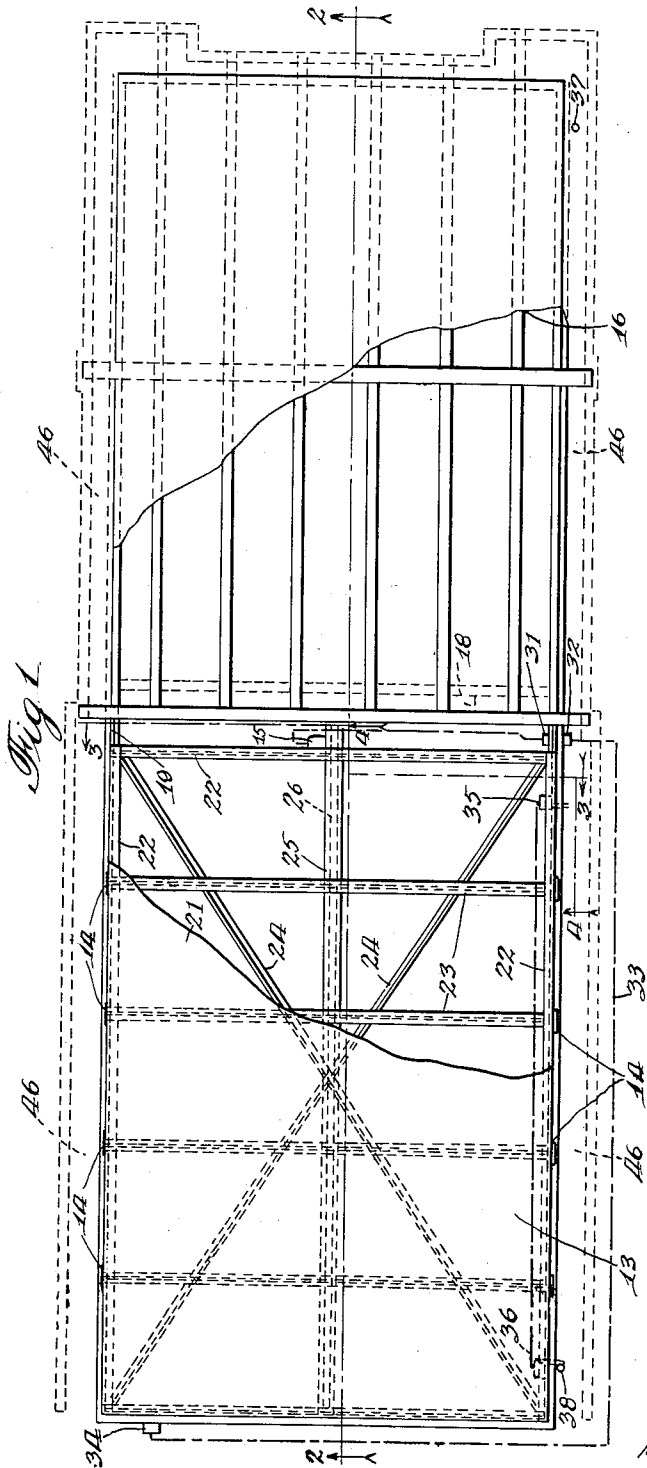
Oct. 29, 1935.

R. J. SIPCHEN
BUILDING CONSTRUCTION

2,019,162

Filed July 17, 1934

2 Sheets-Sheet 1



Inventor
Robert J. Sipchen

By Janss, Addington, Amos & Seibold.
1935.

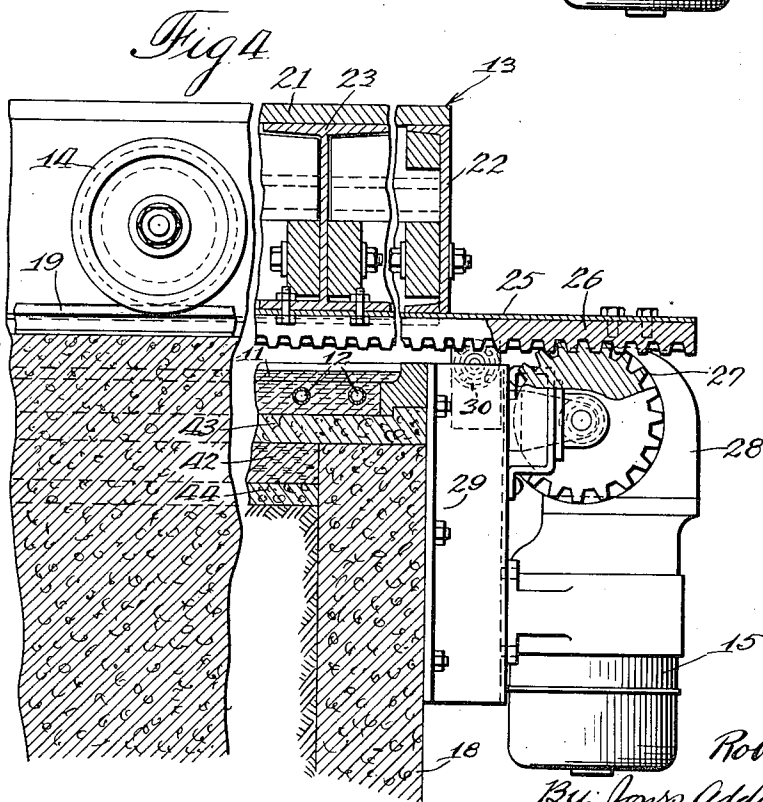
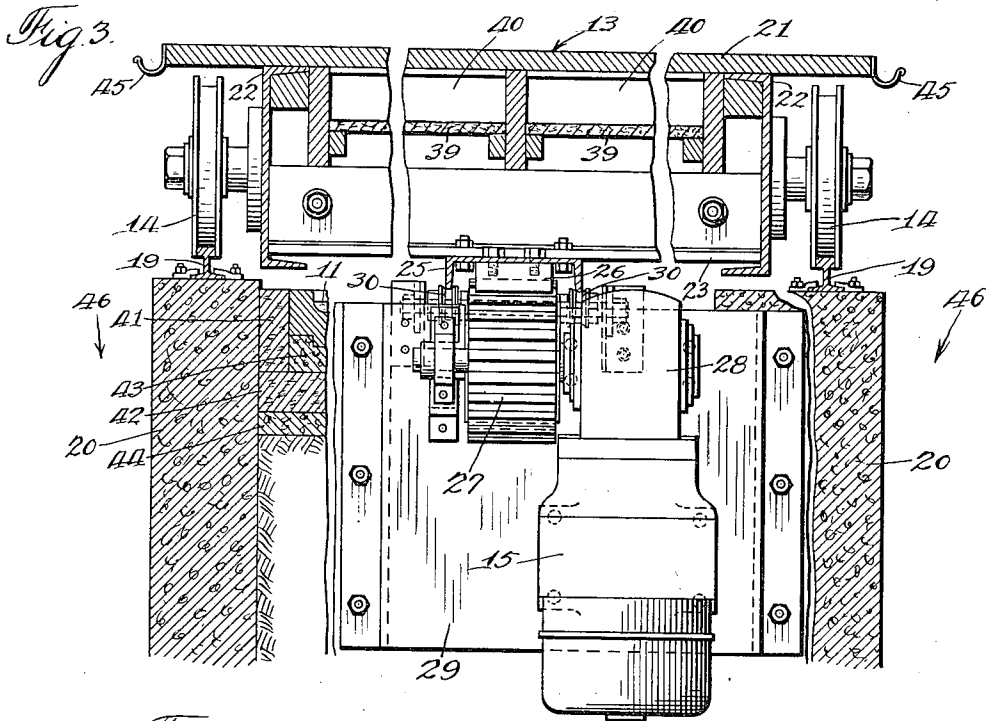
Oct. 29, 1935.

R. J. SIPCHEN
BUILDING CONSTRUCTION

2,019,162

Filed July 17, 1934

2 Sheets—Sheet 2



Inventor
Robert J. Sipchen
By: Jones, Addington, Amos & Seibels
Attys.

UNITED STATES PATENT OFFICE

2,019,162

BUILDING CONSTRUCTION

Robert J. Sipchen, Chicago, Ill.

Application July 17, 1934, Serial No. 735,593

3 Claims. (Cl. 20—0.5)

This invention relates to improvements in building construction and has particular relation to a construction providing interchangeable floorings usable for different purposes.

6 The primary object of the invention is to provide a construction embodying a skating rink and a movable floor section which may be positioned over the rink and removed therefrom at will, so that the same space may be used interchangeably for skating or other purposes, such, for ex-
10 ample, as a dance floor.

Another object of the invention is to provide a construction of the above indicated character in which the movable floor section embodies
15 heat insulating means whereby to protect the ice of the skating rink against excessive loss of heat when the movable floor section is positioned thereover, thereby permitting the skating rink to be located out of doors in a position exposed
20 to the heat of the sun during a large part of the time or in other positions where it would be difficult or impossible to maintain a sheet of ice in properly frozen condition if it were exposed at all times.

25 A further object of the invention is to provide operating and control means for controlling the movements of the movable floor section between a position covering the skating rink and another position removed therefrom.

30 The above and other objects and advantages of the invention will appear more fully, and the invention will be better understood, by reference to the detailed description of a preferred embodiment of the same appearing hereinafter, taken in conjunction with the accompanying
35 drawings forming a part hereof, in which:

Figure 1 is a plan view of the principal parts of a construction in which the invention is embodied, certain of the parts being broken away
40 to illustrate other details of the construction more fully;

Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1;

45 Fig. 3 is an enlarged fragmentary vertical sectional view taken on the line 3—3 of Fig. 1; and

Fig. 4 is an enlarged fragmentary vertical sectional view taken on the line 4—4 of Fig. 1.

Referring first to Figs. 1 and 2 of the drawings a sheet of ice forming a skating rink is designated by the reference character 11. The ice may be frozen and maintained in that condition by any suitable refrigerating means, which means per se do not form a part of the present invention and accordingly are illustrated diagrammatically simply in the form of pipes or
55

tubes 12 extending through the ice layer for the purpose of conducting a refrigerating medium therethrough. The invention provides a construction which permits the maintenance of the ice in properly frozen condition when located out
5 of doors or otherwise exposed to high temperatures and accordingly is not illustrated as being enclosed in a building, although it will be understood, of course, that it may be so arranged if desired. The structure may, therefore, include
10 walls or barriers of any desired height around the skating rink, but since such elements do not constitute an essential part of the construction, they are not illustrated in the drawings.

The location of the skating rink out of doors
15 or in other locations where the temperature may become relatively high, is facilitated by the provision of a movable floor section 13, which is of substantially the same dimensions as the skating rink and which may be positioned thereover
20 or removed therefrom at will. This movable floor section is supported on wheels 14 and is movable by means of an electric motor 15 and intermediate power transmission means described in greater detail hereinafter. In one position of the
25 movable floor section 13 the same covers the skating rink as illustrated in the drawings and serves to protect the same from excessive loss of heat, particularly by reason of the construction of said floor section as an insulating element, as later
30 described.

Adjacent the skating rink is a fixed structural section 16 which may constitute a pavement, as of a sidewalk or roadway, or the floor of an adjacent room or building. Beneath this fixed
35 structural section a recess 17 is provided in alignment with the movable floor section 13 whereby the latter may be withdrawn from the position covering the skating rink into said recess to render the ice surface available for use. The mov-
40 able floor section 13 is illustrated in dotted lines in Fig. 2 in the position which it occupies when thus removed from covering relation to the skating rink.

The motor 15 is located in a pit 18 beneath the
45 path of travel of the movable floor section 13, as shown.

Figs. 3 and 4 illustrate in greater detail the mechanism for actuating the movable floor section. As shown in Fig. 3, the wheels 14 supporting the movable floor section 13 are arranged to
50 run on rails 19, 19 supported on suitable foundations 20, 20 which extend along the sides of the skating rink. The element 13 is composed of structural members including a top surfacing
55

layer 21 which may be conveniently made of wood and finished to provide a dance floor or a flooring usable for other purposes when the movable floor section or platform is in extended position over the skating rink. The flooring 21 is supported by structural frame members 22, 22 and intermediate transverse beams 23, 23 and also preferably by diagonal braces 24, 24 (Fig. 1). The transverse beams 23, 23 and the end frame members 22, 22 which are parallel thereto are preferably arched or cambered slightly for strength and also to provide a slope on the flooring for drainage purposes, as when the same is located out of doors and exposed to rain.

Secured to the bottoms of the transverse beams 23, 23 and the end frame members 22, 22 parallel thereto are a channel member 25 and a rack 26 located inside the channel member, as best shown in Fig. 3. The rack 26 meshes with a driving pinion 27, which is driven by the electric motor 15 through a suitable speed-reducing mechanism 28. The driving mechanism, including the motor, speed reducer, and pinion, is mounted by a suitable bracket 29 on a wall of the pit 18 in such position that the platform or movable floor section passes over the same throughout its path of travel. Supporting rollers 30, 30 are also carried by the bracket 29 and are positioned to receive the downwardly extending flanges of the channel member 25 to support the rack 26 in proper relation to the pinion 27.

The motor 15 is connected to a suitable power supply line, not shown, through switching means preferably comprising a magnetically operated reversing switch indicated diagrammatically at 31 in Fig. 1, and the switching means may be provided with a relay control diagrammatically shown at 32. From the relay control mechanism connections indicated by the line 33 extend to a control station 34 from which an operator may start, stop and reverse the movement of the platform or movable floor section 13. Other suitably arranged connections preferably extend from the control relay means 32 to limit switches 35 and 36, which respectively cooperate with limit stops 37 and 38 to limit the movements of the platform or movable floor section at the respective ends of its path of travel. It will be understood that the limit switches may be located on the movable floor section to cooperate with fixed stops as shown, in which case connections will be made to the limit switches through suitable sliding contacts or flexible cables, or that the stops may be mounted on the movable floor section and the cooperating limit switches located on the stationary parts of the structure.

The control system may be of any standard type, such for example, as a push button control in which the control station 34 will consist of a forward button, a reverse button and a stop button. Pushing the forward button will start the movable floor section moving in one direction and pushing the reverse button will start its movement in the other direction. Such movements can be interrupted at any point by pressing the stop button, but otherwise will continue until the movable floor section reaches its extreme position in the direction in which it is moving. As it approaches either of these extreme positions the corresponding limit switch 37 or 38 will be operated to interrupt the control circuit which governs the movement in that direction. These control operations may be effected through a standard control relay means 32 serving to open and close the usual forward and re-

verse switches embodied in the device 31, through which the motor 15 may be connected to the power supply to run in either direction, or to be entirely disconnected therefrom. Control systems of this character are well known in the art and any standard system which will accomplish the function described may be used.

The movable floor section further comprises sheets of insulating material such as fiber boards 39, 39, or the like (Fig. 3), which are preferably spaced below the upper layer of the movable floor section to provide so-called dead air spaces 40, 40 within the movable element, so that the same will provide a highly efficient insulating member for protecting the ice of the skating rink against excessive loss of heat when the movable floor section is positioned thereover. The ice layer 11 is preferably insulated by marginal sections of cork 41 or other suitable insulating material and an inserted layer of similar or other insulating material 42 between layers 43, 44 of concrete in the foundation of the rink, so that when the movable platform is positioned over the rink the latter will be insulated on all sides against loss of heat and the refrigerating means 12 will be able to lower its temperature rapidly and maintain it at the low degree necessary to keep the ice frozen under all conditions. It has been found in actual practice that the ice layer may be readily maintained out of doors where it is subjected to the sun's rays when exposed by removal of the movable floor section. After the skating rink has been used for a desired period of time the same may be scraped and sprayed with water, which will freeze quickly upon moving the movable floor section over the same to provide the necessary degree of insulation, during which time said floor section may be used as a dance floor or for other purposes. After the ice has been thus resurfaced the movable floor section may be readily withdrawn in the manner already described to make the skating rink available for further use.

Drainage from the surface of the movable floor section may be accommodated by gutters 45, 45 extending along the sides of said movable section and draining into elongated pits or runways 46, 46 which preferably extend along the sides of the structure outside the foundations 20, 20.

While only one specific embodiment of the invention has been shown and described herein it will be readily understood by those skilled in the art that various changes and modifications may be made in the details of design and arrangement of parts without departing from the spirit and scope of the invention, as set forth in the appended claims.

What is claimed as new and is desired to secure by Letters Patent, therefore, is:

1. A floor structure comprising a sheet of ice forming a skating rink, a platform adapted to cover the same, means for supporting said platform for movement to and from covering relation to said rink, and means embodied in said platform for insulating said sheet of ice against excessive loss of heat when said platform is in covering relation thereto, said platform having its upper surface finished to provide a dance floor or the like when positioned over said rink, whereby the skating rink and the dance floor or the like may be used interchangeably.

2. A floor structure comprising a fixed structural section having a recess thereunder, a sheet of ice forming a skating rink, a platform adapted to cover the same, means for supporting said

platform for movement between a position covering said rink and a position within said recess, and means embodied in said platform for insulating said sheet of ice against excessive loss
5 of heat when said platform is in covering relation thereto, said platform having its upper surface finished to provide a dance floor or the like when positioned over said rink, whereby the skating rink and the dance floor or the like may be
10 used interchangeably.

3. The combination with a skating rink, of a platform adapted to cover the same, means for movably supporting said platform, means forming a pit beneath the path of movement of the platform, a rack secured to the bottom of said platform, and actuating means located in said pit and comprising a pinion intermeshing with said rack for moving said platform to and from a position covering the rink.

ROBERT J. SIPCHEN. 10