

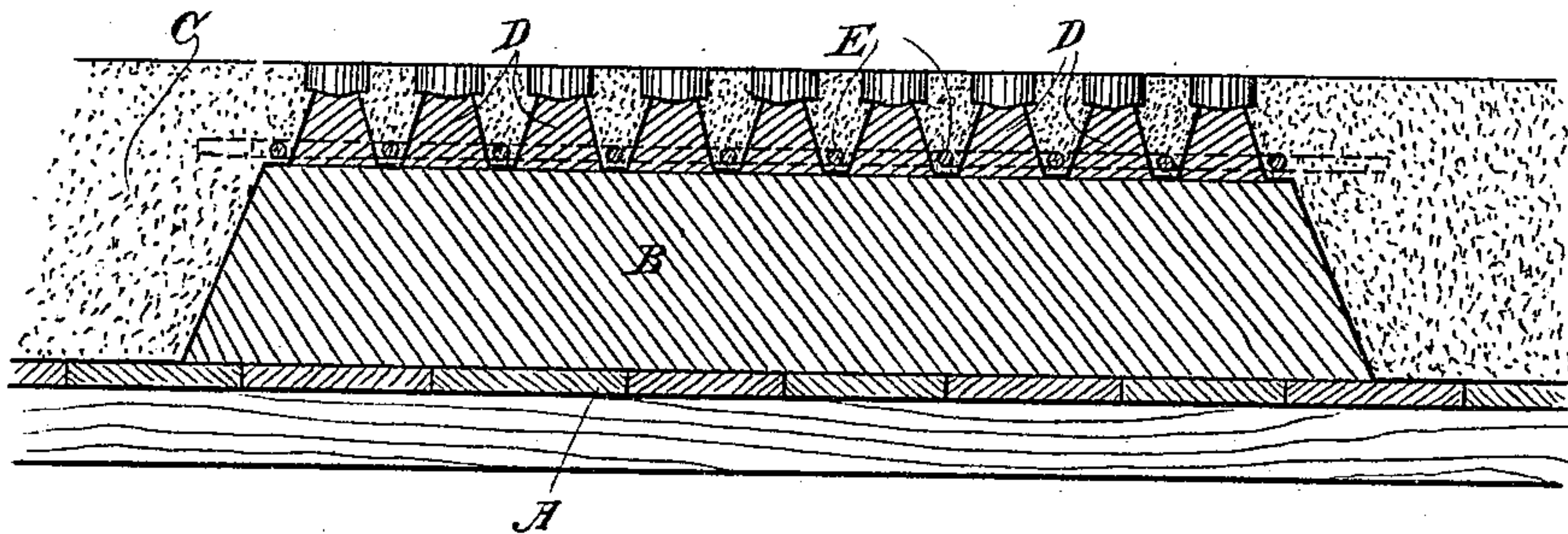
(No Model.)

E. L. RANSOME.  
ILLUMINATING PANEL IN CONCRETE FLOORS.

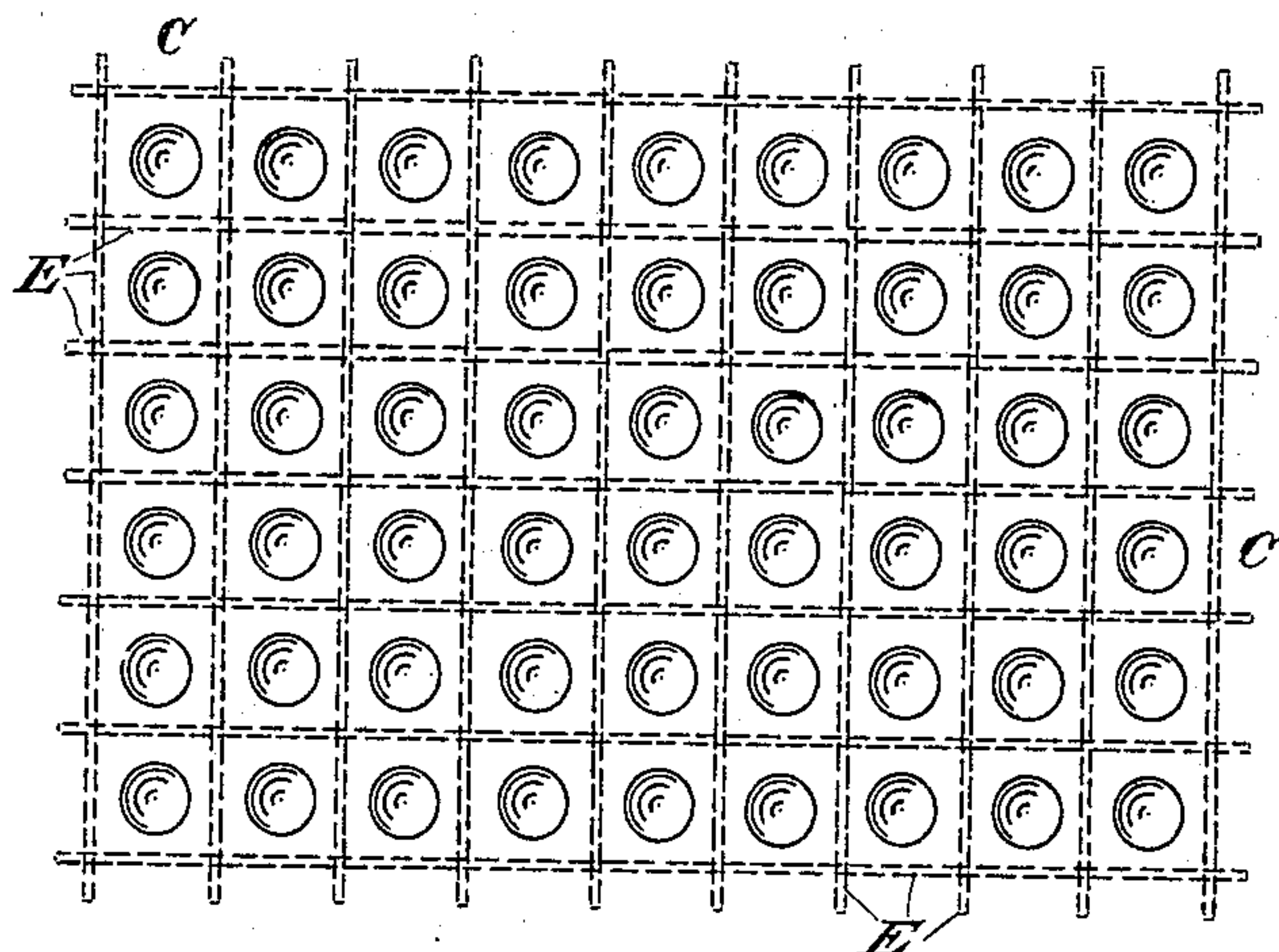
No. 448,993.

Patented Mar. 24, 1891.

*Fig. 1.*



*Fig. 2.*



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# UNITED STATES PATENT OFFICE.

ERNEST LESLIE RANSOME, OF SAN FRANCISCO, CALIFORNIA.

## ILLUMINATING-PANEL IN CONCRETE FLOORS.

SPECIFICATION forming part of Letters Patent No. 448,993, dated March 24, 1891.

Application filed February 12, 1890. Serial No. 340,192. (No model.)

*To all whom it may concern:*

Be it known that I, ERNEST LESLIE RANSOME, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Illuminating Spaces Beneath Concrete Floors; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in illuminating basements and chambers beneath concrete flooring; and it consists especially in setting the glass directly into the concrete.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a vertical section taken through one of my lighting-spaces, showing the concrete flooring and the molds employed in setting the glass. Fig. 2 is a view showing a means for supporting and strengthening the concrete filling intermediate the glass.

In placing lights in concrete flooring for the illumination of basements or for dark chambers beneath such flooring it has been customary to fix the lights in iron or cement plates or frames perforated to receive and support them in position, and these frames have afterward been set into the flooring either before or after it was built, so that a joint would exist between the lights and the floor itself, and these joints are very difficult to make tight.

In my improved method I reduce the cost of manufacture and do away with any joints between the glass or illuminating tile and the main floor by fixing the illuminating glass or tiles directly into the concrete when the floor is in the process of manufacture and in a plastic condition, thus dispensing with all metal frames or supports and preventing any difficulty with joints by molding the glass directly into the floor itself when it is being built. In order to do this I build a false work or temporary frame or floor A, upon which the concrete flooring C is to be built, of any desired thickness. At the point where the lights are to be introduced I place a mold B, which is preferably made with sides which diverge from the top downward, so as to allow the light which passes through the glazed

portion to diverge within the chamber to be lighted after the mold is removed. The depth of this mold will depend upon the thickness of the concrete, but it should extend upward from the bottom of the concrete floor to within a suitable distance of the top of the floor, which distance may be about two inches. The other dimensions of the mold may be made to suit any suitable or usual size of light-opening, as three or four feet square. Upon the top of this mold I fix a series of smaller molds or cores D, which are tapered or in the form of frustums of cones. These small cores are fixed to the mold at regular intervals and in such position that the glass lenses may rest upon and be supported by these cores. As these glass lenses are usually in the shape of short cylinders having the lower surface convex, the cores may be correspondingly concaved or recessed, so as to receive and support the convex lower side of the glass disks.

The depth of these cores will be such that when the glasses rest upon them the top surfaces of the glass disks will be level with the top of the flooring, or as near thereto as may be desired. These molds being all placed and the glasses in the proper position, the concrete flooring is built in the usual way, the plastic concrete flowing in between and around the molds and the glass disks, so as to fill up all the intervening spaces. When the cement is set, the molds and false work are all withdrawn, leaving a floor with the diverging or flaring recess in the space beneath the glass which was previously occupied by the mold B, while the shallow portion of the flooring which forms the top of this recess is composed of the cement, with the glass disks or tiles set in at regular intervals, so as to form a complete illuminating-tile, which is in an integral portion of the floor.

It will be seen that the upper ends of the cores D are of less diameter than the glass disks, and shoulders or ledges are thus formed around these cores, which serve to support the glass disks which are set in from above.

In order to strengthen this thinner portion of the concrete which forms the illuminating-tile, small bars E of twisted iron may be inserted transversely between the rows of glass disks, as shown in Fig. 2, this being done be-



fore the cement is flowed around the disks, so that the bars will be embedded in the cement and the latter strengthened in the same manner that I strengthen main floors.

5 It will be manifest that any shape of glass lens or tile may be employed, and that these illuminating-disks may have flanges or projections to support them properly in the concrete.

10 If desired, the molds and cores may be made hollow, and the upper ends of the cores being open, the glass disks will rest upon these upper open ends of the cores. A vacuum may then be produced within the molds  
15 and cores which will cause a sufficient pressure upon the surfaces of the glass disks to hold them firmly in their seats while the plastic material or concrete is being filled in around them, the molds being afterward removed, as  
20 before described.

The great advantage which I claim for my method of manufacture is that the illuminating disks or tiles are molded into their places, so as to form a part of the flooring itself with-

out any joints or cracks to be afterward kept 25 tight.

The principal part of the flooring may be made of any required thickness for strength, and at the points where light is required the chambers are made from beneath, leaving 30 only such a thickness of flooring at these points as will be necessary to properly support and hold the glass.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is— 35

The monolithic concrete floor having illuminating-panels provided with lenses, said panels being thinner than the body of the floor and strengthened by a net-work of metallic rods embedded therein, substantially as 40 set forth.

In witness whereof I have hereunto set my hand.

ERNEST LESLIE RANSOME.

Witnesses:

S. H. NOURSE,

H. C. LEE.