Feb. 28, 1928.

1,660,370

K. P. BILLNER

POROUS CONCRETE FLOOR

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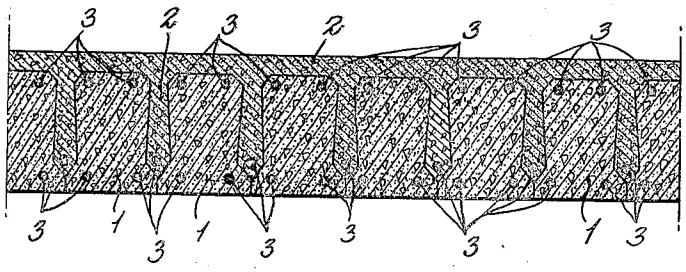


Fig. 1.

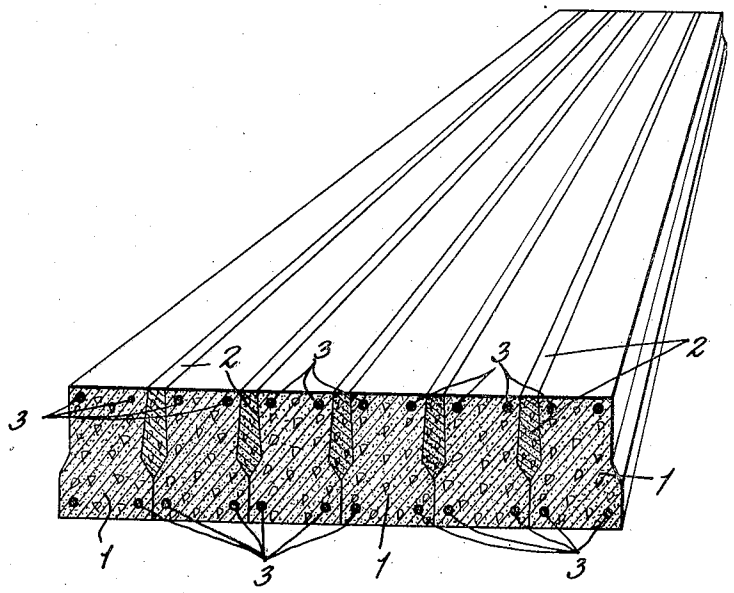


Fig. 2.

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UNITED STATES PATENT OFFICE.

KARL PAULI BILLNER, OF STOCKHOLM, SWEDEN, ASSIGNOR TO THE AEROCRETE CORPORATION OF AMERICA, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

POROUS-CONCRETE FLOOR.

Application filed October 21, 1924, Serial No. 744,932, and in Sweden October 22, 1923.

This invention relates to a floor construction made of cellular concrete and steel reinforcement in combination with ordinary cement concrete. The cellular concrete may be made by using either a chemical or a mechanical process in known manner.

A floor according to this invention is made as follows:

Precast (made before-hand) reinforced beams of cellular concrete of such length that they will span the entire width of a room or a panel are to be mounted into place so that they will lie closely side by side. The beams are to be made wider at the bottom than at the top so that when placed side by side with their bottom parts touching one another there will be open vertical slots between the beams from the top surface part of the way to the bottom. These slots will be filled with solid concrete and if the span of the beams is great, a layer of solid concrete will be poured on top in connection with the filling of the mentioned vertical slots.

The compact concrete may be reinforced with steel bars at the bottom of the slots and transversely on top if wanted. This reinforcement is not needed for ordinary spans and loads. The slots should taper slightly so that they are widest at the bottom. They will, when filled with solid concrete, serve to tie the beams together so that if a load is concentrated on one beam, then the adjacent beams will also help in carrying the mentioned load. The strings of solid concrete in the slots and the layer of solid concrete on top of the beams will serve to give the flooring sufficient stiffness. It will be understood that for ordinary spans the layer of solid concrete on top is not necessary.

On the accompanying drawing Fig. 1 shows a cross section of a floor with a layer of compact (solid) concrete 2 on top of— and in the slots between the beams 1—3 is the reinforcement in the beams. Fig. 2 shows a floor with compact concrete 2 in the slots between the beams 1.

The advantages of this invention are that the floors may be mounted any time of year, also in cold weather. No centering or forms are needed. The beams of cellular concrete are about as light as wooden sills of same dimensions and the finished floor will be lighter than an ordinary concrete floor. After cutting the reinforcement the beams may be sawed off with an ordinary carpenter's saw if they do not fit. A floor of this kind has proved to be very sound-resisting and possesses exceptionally good qualities in regard to insulation against heat and cold.

Having thus described the invention, what is claimed is:

1. A floor comprising precast beams of cellular concrete placed with their adjacent edges close to each other, the beams comprising body portions and flanges extending from the sides at the bottom thereof, poured compart concrete between the beams and forming stiffening ribs, the poured concrete particles entering the pores of the beams, thereby forming an integral solid concrete structure and binding the beams together.

2. A floor comprising precast beams of solid cellular concrete placed with their adjacent edges close to each other, the beams comprising body portions and flanges extending from the sides at the bottom thereof, poured compact concrete between the beams and forming stiffening ribs, the poured concrete particles entering the pores of the beams, thereby forming an integral solid concrete structure and binding the beams together.

3. A floor comprising precast beams of cellular concrete placed with their adjacent edges close to each other, the beams comprising body portions and flanges extending from the sides at the bottom thereof, the bodies of the beams being of greater width at their tops than at a lower portion, poured compact concrete between the beams and forming stiffening ribs, the poured concrete particles entering the pores of the beams, thereby forming an integral solid concrete structure and binding the beams together.

4. A floor comprising precast beams of solid cellular concrete, placed with their adjacent edges close to each other, the beams comprising body portions and flanges extending from the sides at the bottom thereof, the bodies of the beams being of greater width at their tops than at a lower portion, poured compact concrete between the beams and forming stiffening ribs, the poured concrete particles entering the pores of the

beams, thereby forming an integral solid concrete structure and binding the beams together.

5. A floor comprising precast beams of solid cellular concrete, placed with their adjacent edges close to each other, the beams comprising body portions and flanges extending from the sides at the bottom thereof, the bodies of the beams being of greater width at their tops than at a lower portion, the beams having reinforcing rods at their lower portions, poured compact concrete between the beams and forming stiffening ribs, the poured concrete particles entering the pores of the beams, thereby forming an integral solid concrete structure and binding the beams together.

In testimony whereof I have affixed my signature.

KARL PAULI BILLNER.