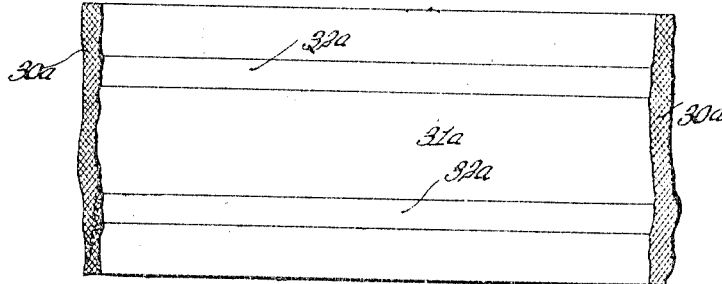
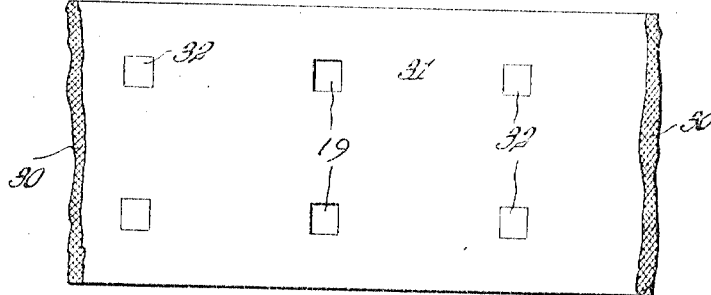
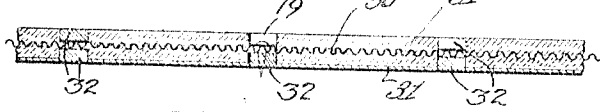
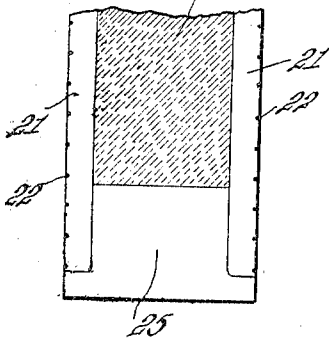
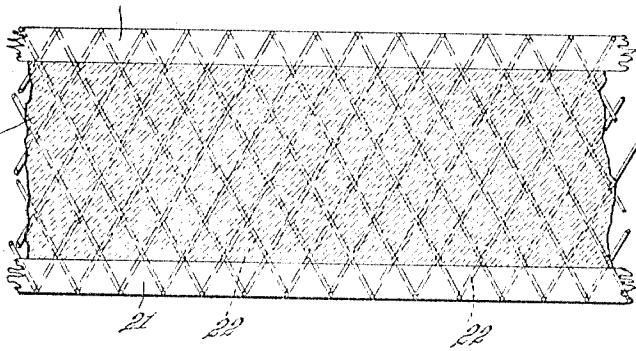
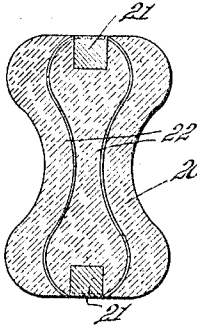


1,064,056.

2 SHEETS—SHEET 1.



Inventor,
Alexis De Rehbinder;

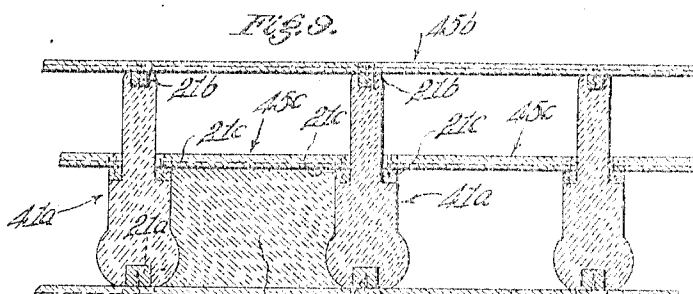
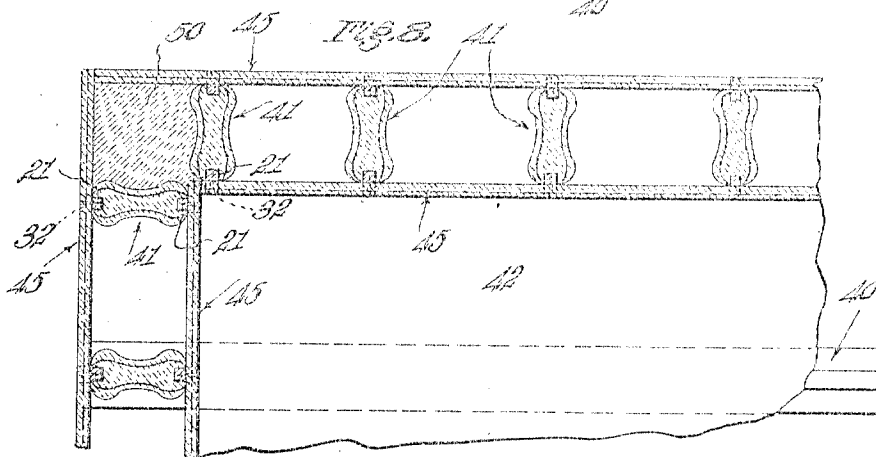
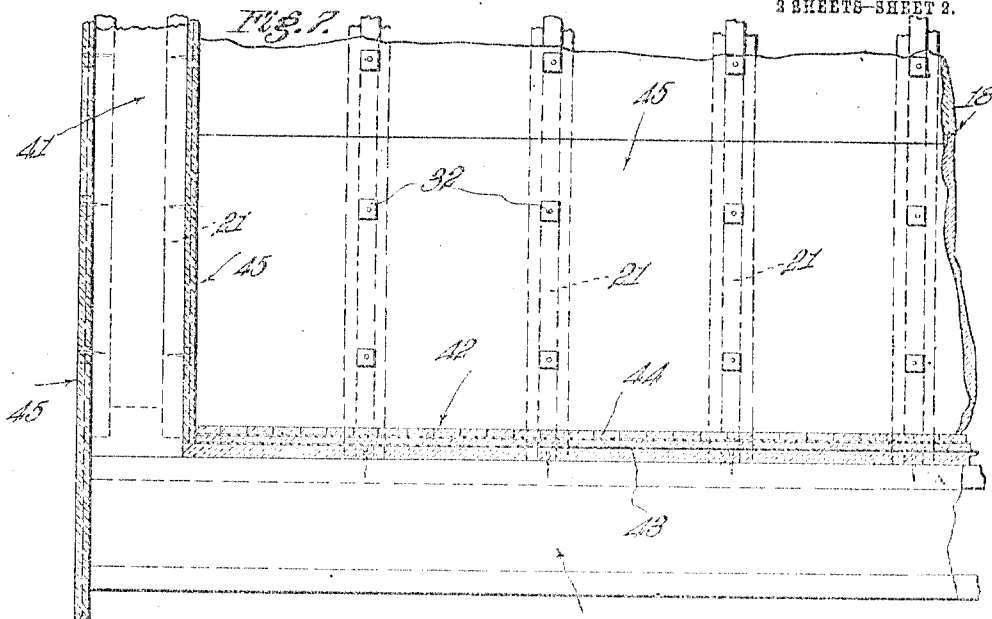
James T. Burkholder
his attorney.

A. DE REHBINDER.
CONCRETE CONSTRUCTION.
APPLICATION FILED MAR. 5, 1913.

1,064,056.

Patented June 10, 1913

3 SHEETS-SHEET 2.



Witnesses.
Edward A. De Rehbinder
P. L. L. L. L. L.

Inventor,
Alexis De Rehbinder,
by James T. L. L. L. L.
his Attorney.

UNITED STATES PATENT OFFICE.

ALEXIS DE REHBINDER, OF LOS ANGELES, CALIFORNIA.

CONCRETE CONSTRUCTION.

1,064,056.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed March 5, 1912. Serial No. 681,698.

To all whom it may concern:

Be it known that I, ALEXIS DE REHBINDER, a citizen of Russia, residing at Los Angeles, in the county of Los Angeles, State of California, have invented new and useful Improvements in Concrete Constructions, of which the following is a specification.

This invention relates to a concrete frame construction for dwellings and all sorts of structures, including bridges and the like; and it consists primarily in certain arrangements and combinations whereby I am enabled to make a structure with concrete or cementitious framing in a manner somewhat similar to the framing and construction of wooden structures.

The fundamental feature on which my system is based consists in a framing or other member composed of cementitious material, preferably reinforced, provided with securing means or members by which it may be secured to other members. In other words, the unit of which my system is built is mainly composed of, say, concrete and has all the advantages inherent in that material; while the securing means make the attachment of the various members extremely easy. In the preferred form, this construction typically takes the form of a framing member composed of reinforced concrete with a securing means along each edge; and the securing means may be a strip or block either of wood or of metal or the like. If the securing means are of wood, then the different frame members may be secured together by means of nails, spikes, screws or the like, and if the securing means are of metal there are then provided certain bolts or rivets or the like for fastening the strips of different frame members together.

There are many and various forms of structural members which may be constructed after my system and in the manner set forth; and I will endeavor to generally point out the application of my system to certain details of construction which ordinarily enter into buildings of general character.

As applied to house structure, I preferably employ reinforced concrete frame members having wooden securing strips or blocks therein. Wall slabs with corresponding strips or blocks are then secured to the frame members by nails or similar fastening devices. The floor construction may be similar

to the wall construction or may be made of a number of layers of different materials as will be hereinafter described. Other structural elements and combinations may be made after my system, including such elements as stairs, brackets, beams, moldings, roof coverings, sidings, etc., and all sorts of detail and ornamental work. All of these elements are easily assembled, it being one of the objects of my invention to provide a system which possesses the strength of reinforced concrete and also the ease of assembly of wood.

I will now proceed to the detailed explanation of some of the preferred forms of my invention, at the same time indicating and describing other forms to which my invention is applicable; the preferred forms being shown in the accompanying drawings, in which:

Figure 1 is a cross section of a typical form of beam or other frame member which constitutes the fundamental element of my construction. Fig. 2 is a longitudinal section thereof. Fig. 3 is a longitudinal section partly broken away showing the end construction of such a member as is shown in Fig. 1 used as a vertical frame member or column. Fig. 4 is a section of a preferred form of wall slab. Fig. 5 is a face view of the same. Fig. 6 is a face view of a modified form of wall slab. Fig. 7 is a sectional view showing a typical construction using my system. Fig. 8 is a plan section of the same. Fig. 9 is a plan section showing a modified form of wall construction.

Referring first to Figs. 1 to 6 of the drawings, 20 designates the body of a beam or other member, preferably made in the cross sectional configuration shown in Fig. 1 and preferably having embedded in its edge portions certain securing strips 21, preferably of wood. These securing strips may be of any desired configuration and relative size, and their outer surfaces preferably come flush with the edge surfaces of the member itself. The member may be suitably reinforced as at 22 in any manner suitable to the use to which it may be put. It is apparent that the reinforcing for beams will be quite different from that used for columns and the like; and any of the systems of reinforcement now in common use may be used in my construction. But I have shown one feature of novelty in passing the reinforcement

around and outside the wooden securing strips, thus holding the strips securely from being pulled out of the embedding concrete.

In Fig. 3 I have shown the end of a column constructed after the manner of the member shown in Figs. 1 and 2, a suitable foot piece 25 being supplied at the end of the column for securing to abutting members of the framework. Such a column as this may be used for studding and like members in the frame construction.

In Figs. 4 and 5 I have shown a preferred form of wall slab, consisting of a central reinforcement 30, say wire netting, surrounded by cementitious material 31 and having securing blocks 32 set in the cementitious material and projecting flush with the surfaces of the slab. Or the blocks may be set so as to leave a depression 19 thereover, plaster or similar material filling this depression, after the parts are assembled, and covering the nails or the like. The face of the slab may be composed of finer cement or plaster than is the body, and also the face may be worked up into various designs if so desired. The size of wall slabs will depend entirely upon considerations such as ease of handling and the situation in which it is desired to use the slabs.

In Fig. 6 I have shown a modified form in which a securing strip 32^a takes the place of the blocks 32. And it will be understood that in all members I may make the securing means continuous or discontinuous; and I may make the securing strips of a number of separate pieces—it is not necessary that they be continuous.

In Figs. 7 and 8 I have shown typical constructions using the parts above described. Here I have shown beams 40 constructed in the manner described supporting suitable vertical framings, columns or studs, 41 also constructed in the manner described. The beams 40 support a floor 42 which is preferably made up of a concrete slab base 43 lowermost and a wooden surfacing 44 uppermost, with suitable layers of building paper or felt paper and other heat insulating and sound deadening materials between them. On the studding 41 there are secured suitable wall slabs 45 constructed in the manner described. The arrangement is such that the securing blocks 32 will come directly into register with the securing strips 21 and the blocks may then be fastened to the strips by means of nails, screws or any other suitable fastening means, thus securing the wall slabs to the framing. The joints between the wall slabs, or, in fact, between any similar parts of the structure, may be made in any desired manner; I have shown at 18 in Fig. 7 a satisfactory manner of joining the slabs therein shown. In Fig 8 I have illustrated what may be the outer corner of a house construction and I

have shown a filling of concrete or other cementitious material 50 at the corner and within the space inclosed by the outer wall slabs 45 and two of the studs 41. This provision greatly strengthens the wall construction; and I may further strengthen the construction by making a similar filling of concrete at any point within the walls or along the floor.

In Fig. 9 I have shown a modified form of wall construction wherein the outer wall slabs 45^a are secured to strips 21^a in the usual manner; the inner wall slabs 45^b being secured to strips 21^b in the usual manner. I have also shown medial securing strips 21^c which present shoulders facing toward the inner wall slabs and to which medial wall slabs 45^c are secured. This construction makes a double wall with double spaces; and I preferably fill the outer sets of spaces either partially or wholly with concrete or other fillings 60. A wall of great solidity and strength is thus formed, and the advantage of having an air space next the inner wall surface is preserved, thus excluding moisture and preventing temperature changes.

The foregoing will suffice to show the extent to which my invention may be applied to structures generally; and, although I have only specifically shown the application of the ideas to a few details, it will be obvious that they may be applied to many others.

Having described my invention, I claim:

1. A concrete building construction, comprising beams and studs of cementitious material having longitudinal securing strips near their surfaces and reinforcements arranged within the cementitious material and passing around outside the securing strips, said beams and studs with their securing strips being spaced in certain definite relation, and other cementitious members having securing pieces therein spaced in relation to each other corresponding to the relative spacing of the securing strips of the beams and studs adapted to register with and be secured to the securing strips of the beams and studs.

2. A concrete building construction, comprising beams and studs of cementitious material having longitudinal wooden securing strips united therewith near their surfaces, said beams and studs with their securing strips being spaced in certain definite relation, and cementitious wall slabs having wooden securing blocks therein spaced in relation to each other corresponding to the relative spacing of the securing strips of the beams and studs, and means for securing said blocks directly to said strips.

3. A concrete building construction, comprising beams and studs of cementitious material having longitudinal wooden securing

strips united therewith near their surfaces,
said beams and studs with their securing
strips being spaced in certain definite rela-
tion, and cementitious wall slabs having
5 wooden securing blocks therein spaced in re-
lation to each other corresponding to the
relative spacing of the securing strips of
the beams and studs, said blocks being set
in each wall slab flush with one face thereof
10 but terminating within the slab beneath the

opposite face thereof, and means for secur-
ing said blocks directly to said strips.

In witness that I claim the foregoing I
have hereunto subscribed my name this 24th
day of February, 1912.

ALEXIS DE REHBINDER.

Witnesses:

ELWOOD H. BARKELEW,
BESSIE McMORDIE.