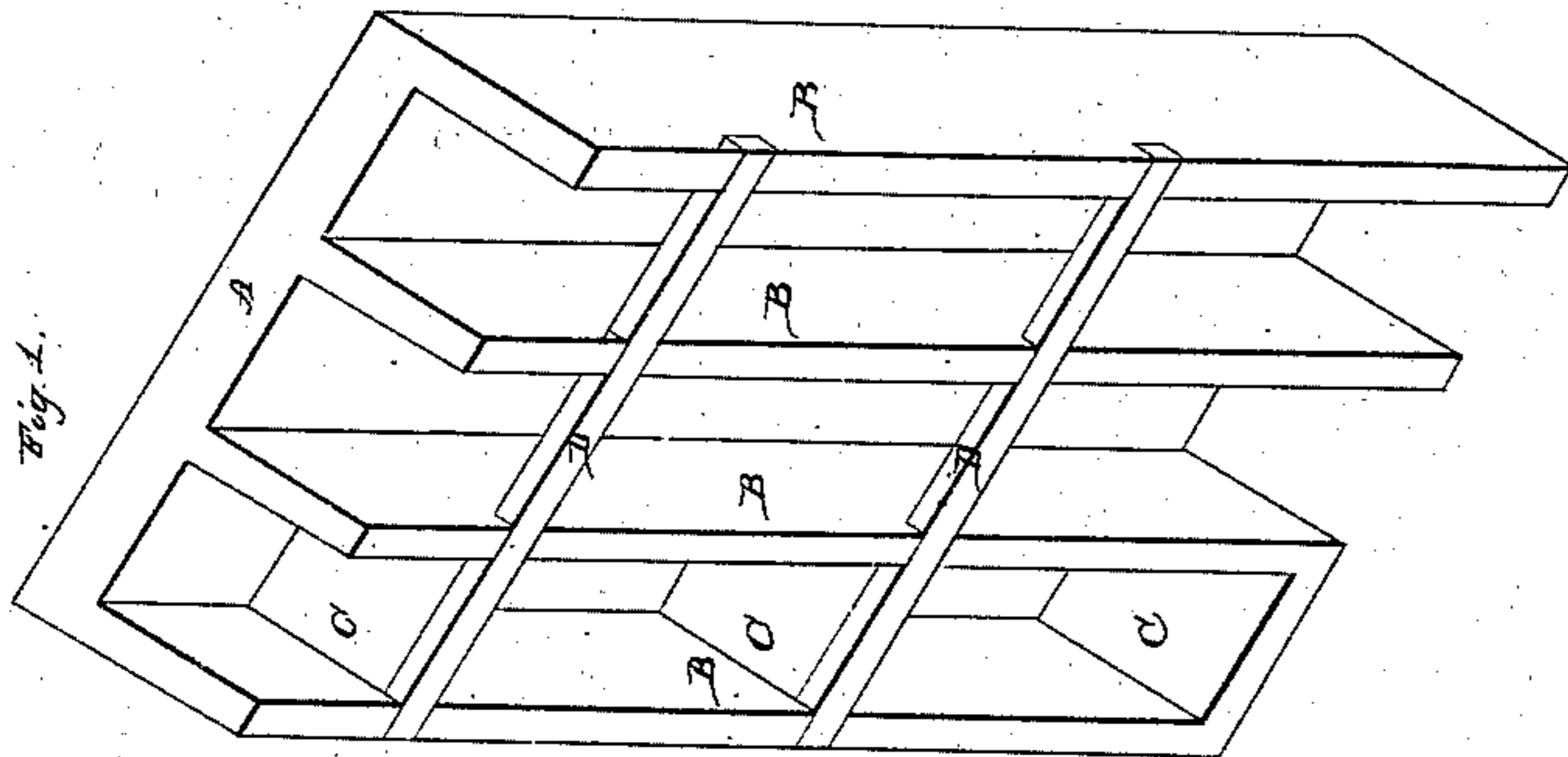
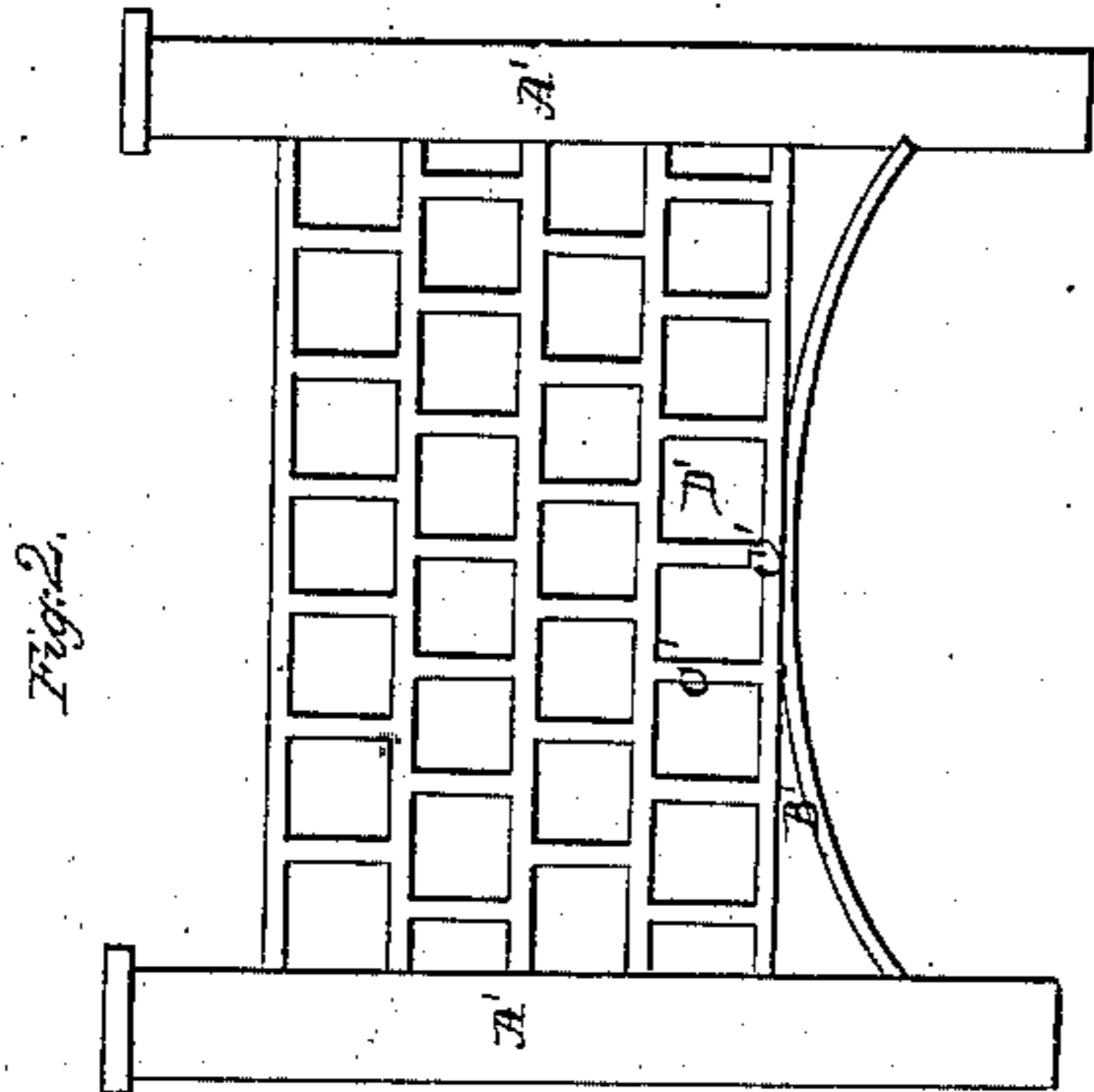
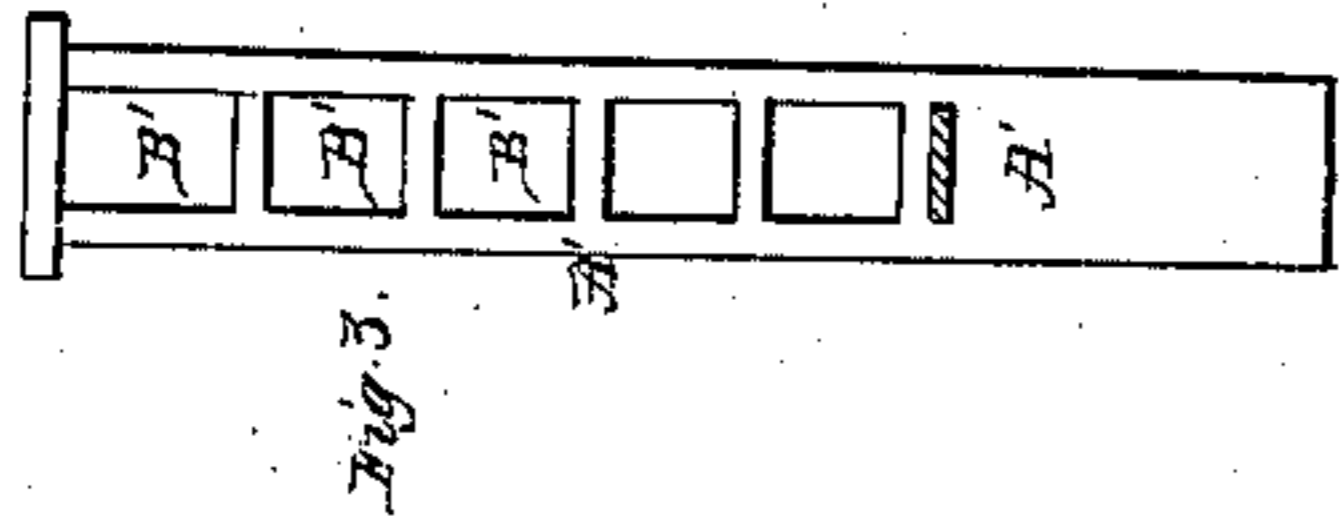


E. Hunt,

Constructing Buildings,

N^o 54,910.

Patented May 22, 1866.



Witnesses:
P. T. Dodge
R. Greenbank

Inventor:
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UNITED STATES PATENT OFFICE.

EBENEZER HUNT, OF DANVERSPORT, MASSACHUSETTS.

IMPROVEMENT IN PROCESSES OF BUILDING CONCRETE AND MORTAR WALLS FOR BUILDINGS.

Specification forming part of Letters Patent No. 54,910, dated May 22, 1866.

To all whom it may concern:

Be it known that I, EBENEZER HUNT, of Danversport, Essex county, State of Massachusetts, have invented a new and Improved Mode or Process of Building Concrete or Mortar Walls for Dwelling and other Houses, roofs, posts, fences, floors, flag-stones, and other structures; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements without further invention or experiment.

The nature of my invention and improvements consists in using cores of sand or other cheap material, which can be removed from time to time, and used again, until the structure is completed, thereby securing great economy in the amount of concrete or mortar necessary to compose the structure, and consequently in the expense of the same, and also securing the additional advantage of hollow walls, forming an air-chamber, which shall be a non-conductor of heat and moisture, and render buildings so constructed cool in summer and warm and dry in winter, at the same time affording a simple and perfect means of ventilation.

To enable others skilled in the art to make and use my invention, I will proceed to describe its application to the building of a wall for a house.

Having laid the foundation below the reach of frost, I set two boards edgewise, parallel, and as far apart as the contemplated thickness of the wall, fastening the same together by strips of wood or iron rods. I then insert the cores, made of sand, loam, or similar material, so that one side shall come in contact with the inner board and the other side remain at a distance from the outer board equal to the thickness of concrete or mortar required to give sufficient strength to the wall, which may vary from one to three inches, according to the height and purposes of the building. I leave the ends of the cores from one to three inches apart, according to the required strength of the wall, and so make and place the cores as to leave an inch or more between the tops of the cores and the tops of the boards. I then fill in the space between the cores and

the outer board, between the ends of the cores, and also on top of the cores, up flush with the tops of the boards, with soft concrete or mortar composed of cement and sand, lime and sand, or other material commonly used for a concrete or mortar wall. I insert in the concrete or mortar, on the inside of the wall, strips of board on which to fasten furring for the purpose of lathing and plastering. When one or more layers of these cores have been used, and the concrete or mortar is sufficiently set and hardened, I remove the cores, and the same material may be again used for cores until the wall is completed. Thus I have an outer wall supported and strengthened by the material which fills the space between the ends of the cores, and also between the tops of the cores and the tops of the boards, and by the furring, lathing, and plastering, and composed of a series of air-chambers throughout the whole extent of the wall.

Whenever it is desirable to secure the means of ventilation I omit the horizontal layer and brace of mortar or concrete at any given part of the wall by making the cores to come up flush with the tops of the boards, and thus leave a continuous column of air from the bottom to the top of the wall, into which a ventilating-aperture can be made from each room. So, when less strength is required in the wall, I omit the horizontal layer or brace entirely, and thus the means of ventilation is left complete, and this plan would give sufficient strength for the walls of ordinary dwelling-houses.

In the accompanying drawings I have given views of two of the many ways in which this process can be applied.

Figure 1 represents a section of a wall with the cores removed. A shows the outer wall, of concrete or mortar. B shows the supporting brace or partition, of concrete or mortar, and C the horizontal support, of the same material, while D represents the strip of board inserted, to which the furring is to be fastened.

Fig. 2 represents a section of a fence. A' represents a front view of a concrete or mortar post constructed by means of cores. B' represents a board sprung between the posts at the surface of the ground as an arch to support the cores while the fence is building. C' represents the concrete or mortar of which the

fence is composed, and D' represents the spaces from which the cores have been removed.

Fig. 3 represents a lateral view of the post, A' showing the concrete or mortar, and B' showing the spaces from which the cores have been removed.

It will be perceived from the foregoing how my invention may be applied to the construction of walls for dwelling and other houses, and to fences, the process of building a fence being so similar to that of building a wall as not to require a separate and minute explanation, the principle being the same.

Some of the many advantages of my invention are:

First, the great saving of material, as but a small part of the concrete or mortar required to build a solid wall is necessary when cores are used, as in my invention. The saving of material is necessarily a corresponding saving of expense when the manner of construction, as in my invention, is so simple and inexpensive, requiring only the cement or lime and sand of which to make the concrete or mortar, the sand or loam of which to form the cores, and the boards to form the molds, which can be raised and reused after the first layer of cores or the first section of the wall is built. Houses thus constructed would be very desirable in those parts of the country where timber is scarce and lumber proportionately expensive, and they would need no paint to preserve or ornament them.

Second, my invention has the advantage over solid walls of rendering houses so con-

structed cool in summer and warm and dry in winter.

Third, it has the advantage of affording a simple and yet perfect means of ventilation—a great desideratum for health and comfort.

Fourth, my invention, as applied to fences, has the advantages of durability, cheapness, and simplicity of building and of requiring no paint.

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

1. The construction of concrete or mortar walls for dwelling and other houses by the use of cores made of sand, loam, or some other cheap material, so arranged within the molds which form the walls as to leave a space for the concrete or mortar forming the exterior surface of the wall, and from this outer face of the wall projections of the same material extending perpendicularly from top to bottom and inwardly as far as the contemplated thickness of the wall, strengthened, if required, by horizontal projections of the same material at proper distances, substantially in the manner and for the purposes set forth.

2. The building of posts, fences, roofs, floors, flag-stones, and other like structures of concrete or mortar, or their equivalents, by the use of cores, substantially in the manner and for the purposes set forth.

EBENEZER HUNT.

Witnesses:

JAS. C. WILLIAMS,
L. C. TALLMADGE.