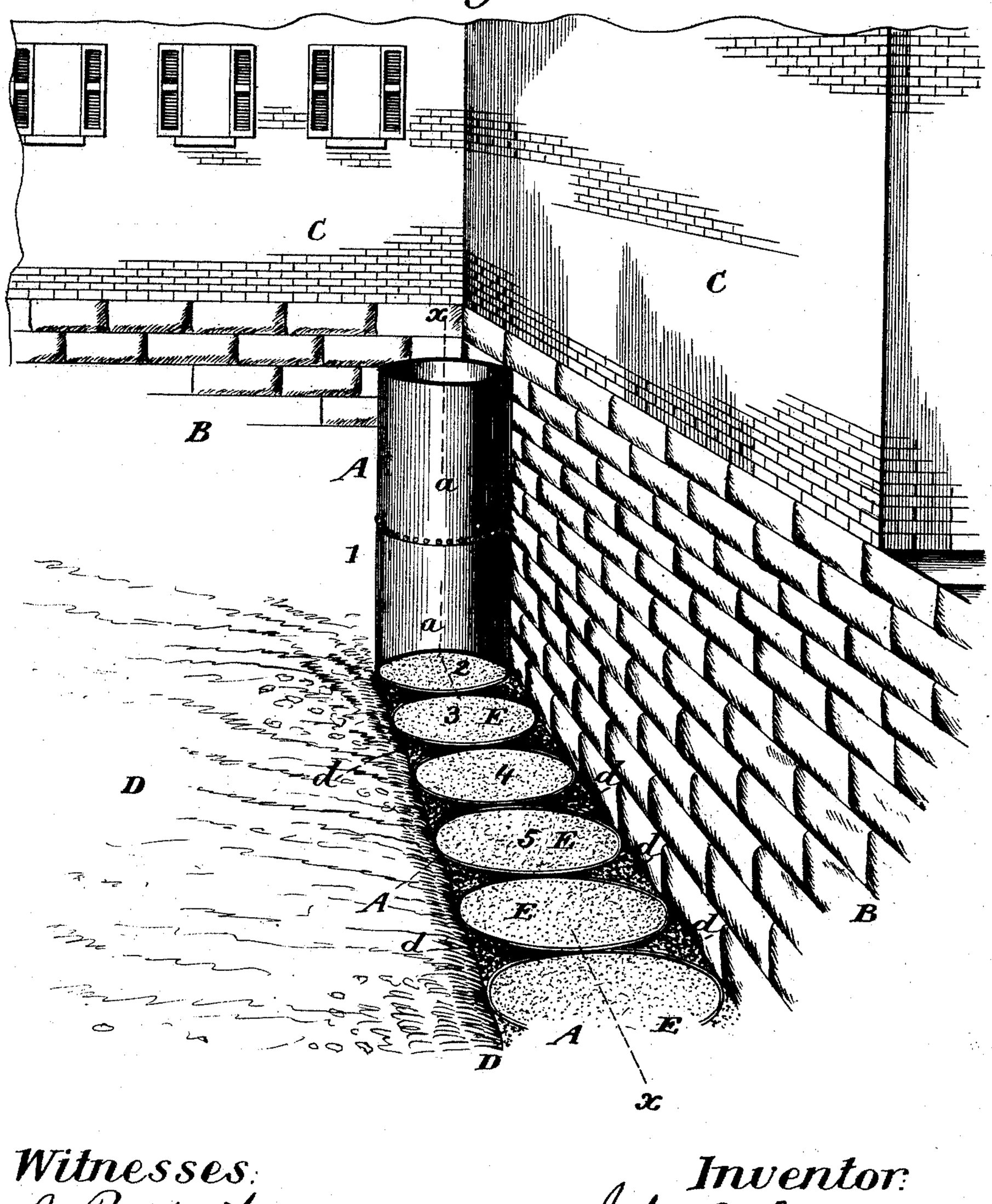
(No Model.) 2 Sheets—Sheet 1.

J. E. ROBINSON.

METHOD OF CONSTRUCTING FOUNDATIONS FOR BUILDINGS.

No. 468,228. Patented Feb. 2, 1892.

Fig. 1.



Witnesses:
A. Ruppert.
E. Cruse.

Inventor:
John E. Robinson,
by Chas. W. T. Howard
Atty.

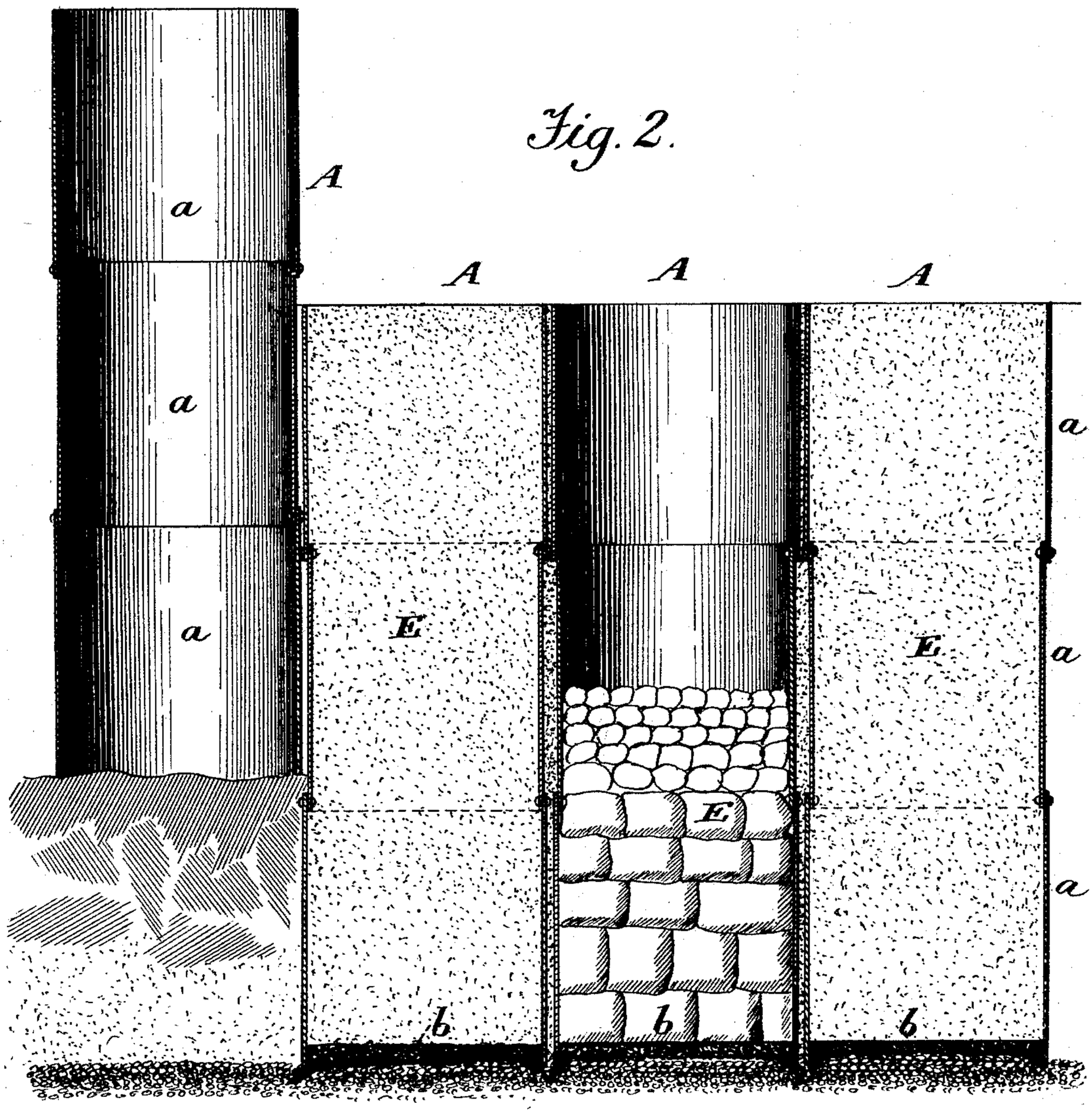
(No Model.) 2 Sheets—Sheet 2.

J. E. ROBINSON.

METHOD OF CONSTRUCTING FOUNDATIONS FOR BUILDINGS.

No. 468,228. Patented Feb. 2, 1892.

Fig. 2.



Witnesses:
A. Ruppert.
E. Cruse.

Inventor:
John E. Robinson,
by Chas. W. T. Howard,
Atty.

UNITED STATES PATENT OFFICE.

JOHN E. ROBINSON, OF PHILADELPHIA, PENNSYLVANIA.

METHOD OF CONSTRUCTING FOUNDATIONS FOR BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 468,228, dated February 2, 1892.

Application filed October 31, 1891. Serial No. 410,512. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. ROBINSON, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Method of Constructing Foundations for Buildings, of which the following is a specification.

My improved method is specially applicable to foundations for heavy structures, and particularly where the foundation to be constructed must go lower than that of an adjacent building. Heretofore in such cases it has been necessary to underpin the walls adjacent to the building to be erected, and this frequently is a difficult and dangerous operation, especially where the walls to be underpinned are very heavy, as is often the case with the large buildings now constructed. By my improved method underpinning is entirely dispensed with, and a foundation may be sunk to any desired depth below that of an adjacent building without in any manner exposing the latter to danger.

In describing my improved method, reference is had to the accompanying drawings, in which—

Figure 1 is a perspective view of a foundation in course of construction alongside another building. Fig. 2 is a vertical section on the line *x x* of Fig. 1.

A A represent a series of cylinders, each being made up of sections *a a*, riveted or bolted together, as shown.

B represents a portion of the foundation of an adjacent building C, and D the surface of the ground.

In carrying out my method the cylinders are sunk into the earth on the line of the foundation, the earth, &c., being removed from their interiors as they sink. When the lower ends of the cylinders rest on a suitable base, such as gravel or rock, I pour grout on the base in a sufficient quantity to fill up any interstices or uneven surfaces in the base and to extend up in the cylinders a short distance, as indicated at *b*. When the grout sets, it will adhere firmly to the base and the lower ends of the cylinders and form a solid anchoring-foundation for the cylinders. I then fill the cylinders with a suitable foundation material E, such as concrete or masonry. When the foundation is not adjacent to a building, the cylinders may be sunk in rotation, or, in other words, one cylinder having been sunk, another may be sunk close to it, and they may be filled at convenience. When, however, the foundation is to be constructed next to another building, as illustrated in the drawings, it is preferable to sink the cylinders alternately—that is to say, supposing there are to be twenty cylinders in a row, I first sink No. 1, then No. 3, then No. 5, and so on until half the cylinders have been sunk. I then return and sink No. 2, then No. 4, and so on until all the cylinders are in place. I also fill the cylinder last sunk with the foundation material while I am sinking the next. In this manner the new foundation can be constructed without underpinning the old one or in any way exposing it to danger. The cylinders should be of a diameter greater than the width of the wall proposed to be built upon them, and the portion not built upon should be on the inside of the wall. This will effectually obviate any danger of the cylinders being forced inwardly at their upper ends, as in order to do this the entire weight of the wall would have to be lifted. The surrounding earth or the adjacent building will prevent their movement outwardly. The angular spaces *d d* between the cylinders are preferably filled with grout, concrete, or other suitable material.

This foundation is especially valuable for a building where it is essential that entrance to or exit from such building by tunneling through or under its foundation is to be guarded against, for it is obvious that it would be a matter of great difficulty to cut through the cylinder and its contained concrete or masonry, and equally so to cut a way through the solid bed on which the cylinders rest. This foundation is therefore well qualified for banks, safe-deposit structures, jails, &c. It is to be understood that the cylinders will be of a length necessary to enable them to rest on a solid base, and that they may be of unequal lengths to adapt them to any inequalities of the base on the line of the foundation.

Having described my invention, I claim—

1. The method herein described of constructing a foundation for a building, which consists in sinking a series of metal cylinders into the earth on the line of the foundation

until they rest on a suitable base, removing the soil, &c., from within the cylinders, anchoring the bottoms of the cylinders to the supporting-base, and then filling the cylinders with a suitable foundation material, substantially as described.

2. The method herein described of constructing a foundation for a building to be erected adjacent to another building without underpinning the latter, which consists in sinking into the earth a series of metal cylinders adjacent to the foundation of the old building until the said cylinders rest on a suitable base, removing the soil, &c., from within the cylinders, anchoring the bottoms of the cylinders to the supporting-base, and then filling the cylinders with a suitable foundation material, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal.

JOHN E. ROBINSON. [L. S.]

Witnesses:

G. M. FINLEY,

W. H. BARNES.