

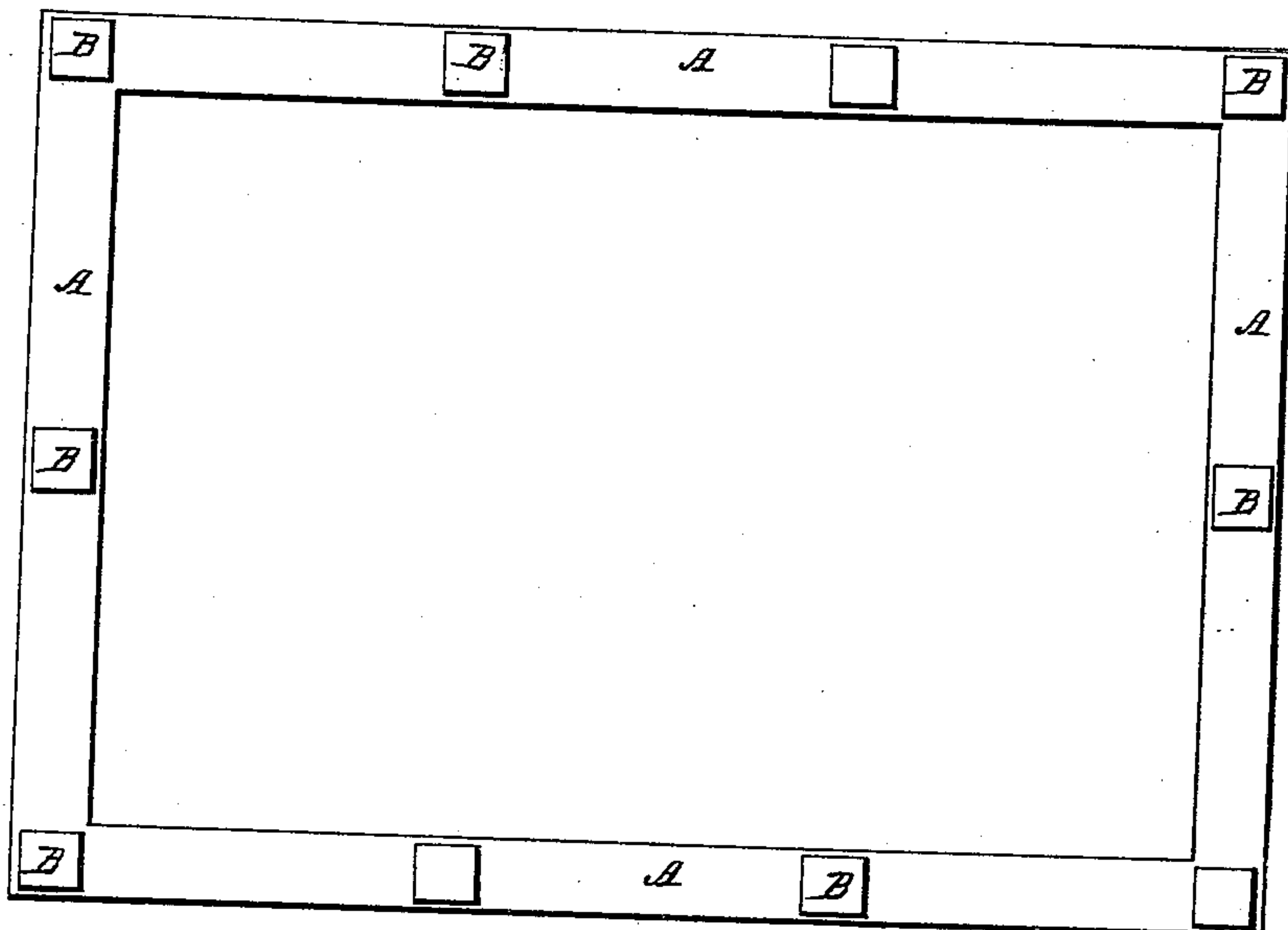
*A. F. Cooper.*

*Constructing Buildings.*

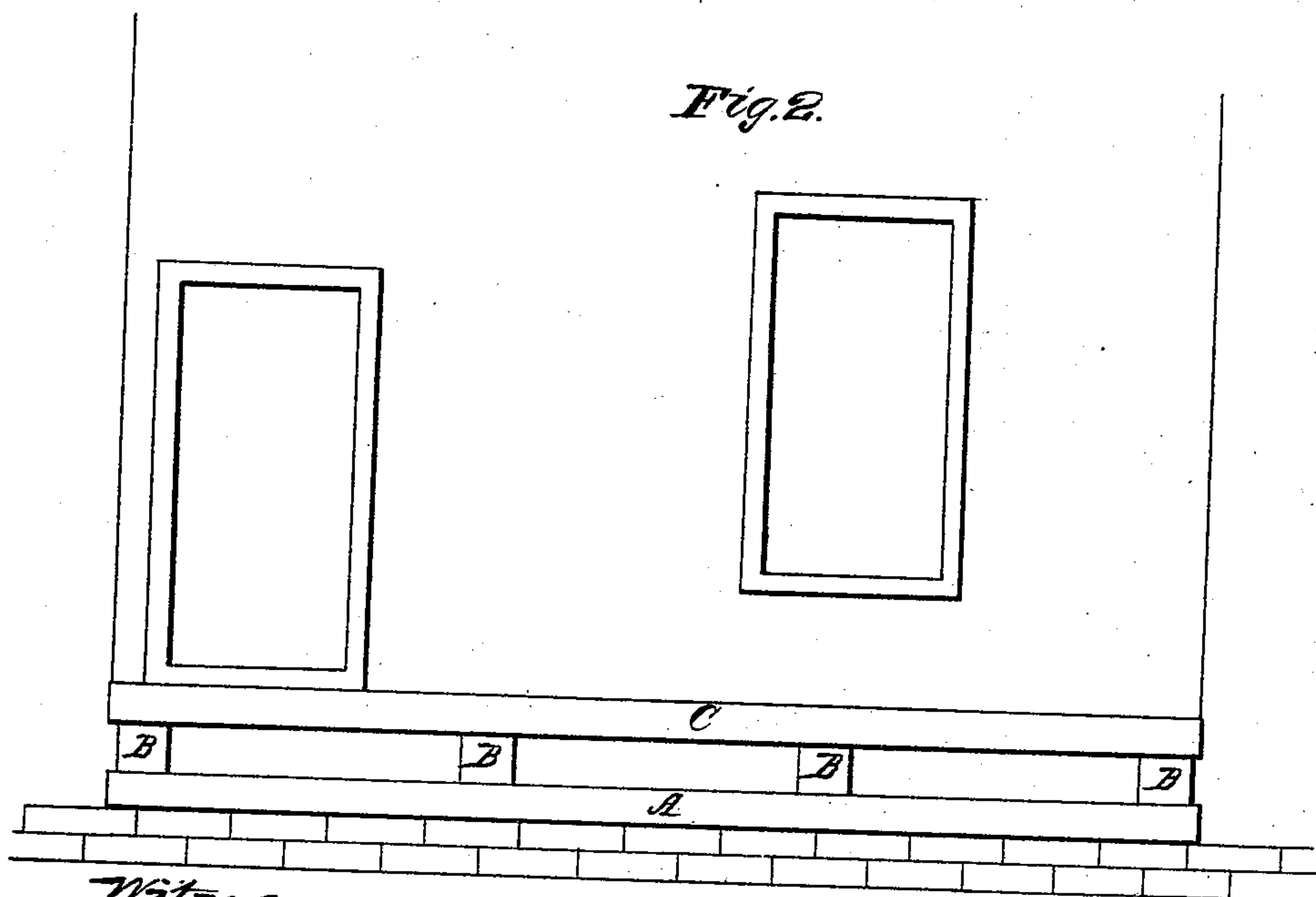
*N<sup>o</sup> 100,262.*

*Patented Mar. 1, 1870.*

*Fig. 1.*



*Fig. 2.*



*Witnesses:*  
*Geo. H. Strong*  
*Geo. L. Strong*

*Inventor:*  
*Almond F. Cooper*  
*By his Attys*  
*Dewey & Co.*

# United States Patent Office.

ALMOND F. COOPER, OF SAN FRANCISCO, CALIFORNIA.

*Letters Patent No. 100,262, dated March 1, 1870.*

## IMPROVED FOUNDATION FOR BUILDINGS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, ALMOND F. COOPER, of the city and county of San Francisco, State of California, have invented an Improved Foundation for Buildings; 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.

My invention relates to an improved construction of the foundations of buildings, and especially of those which are built in countries subject to earthquakes, where sudden shocks or tremors of the earth are felt, which rack and often ruin the strongest and most substantial buildings, and it consists in placing upon the solid and permanent foundation upon which houses are usually built a timber, upon which, or imbedded in it, are springs of India rubber or other suitable material, attached in such a manner that they will project above it, and upon which I place another timber as a stringer upon which to build the house.

To more fully illustrate and explain my invention, reference is had to the accompanying drawings and letters marked thereon, forming part of this specification, of which—

Figure 1 is a plan.

Figure 2 is a side elevation.

Upon the usual brick or stone foundation, shown in red, fig. 2, I place timbers A A, which are framed together at their ends. These timbers may be firmly imbedded in the foundation, or they may be merely placed upon it and suitably stayed in place.

At suitable distances apart upon these timbers I place springs or India-rubber buffers B B, securing them in place by some suitable means. These buffers will be placed closer together or farther apart, according to the weight of the building to be erected and the necessities governing each particular case.

Upon the buffers B B, I then place another frame, C, similar to A, upon which the structure is to be built in the ordinary or usual styles of building, the

frames and buffers being as it were "sandwiched" between the foundation and the house, so as to relieve it of any jar which it may receive.

Other springs might be employed in lieu of the India rubber, and in some instances a heavy spiral spring would be of great utility, especially when used with the rubber buffers, alternating them so that they shall relieve one another.

The idea that houses, in order to withstand the shocks of earthquakes and other local disturbances of the earth beneath them, must be permanently anchored to the ground has been proved to be entirely erroneous. What is needed is a system of springs, so arranged beneath the house that the motion or shock will be deadened before it reaches the building, and what motion is communicated to the house will be no more than a gentle rocking, which can do no injury to the structure.

The late earthquakes in California have indicated that the earth-wave, as it passes under strongly-built structures, raises each part consecutively, thus twisting and racking the building to such a degree as to render some of them even dangerous to be left standing. In this case the yielding nature of the springs and buffers, when used as above specified, will cause the shock to be received gradually or in such a slight degree as to be harmless to the building.

Having thus described my invention,

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

1. The frames A and C, separated by India-rubber buffers B or other equivalent spring, substantially as and for the purpose herein described.

2. Erecting buildings upon elastic cushions or springs to relieve them of the effects of shocks, substantially as herein set forth.

In witness whereof, I have hereunto set my hand and seal.

ALMOND F. COOPER. [L. s.]

Witnesses:

JOHN L. BOONE,  
GEO. H. STRONG.