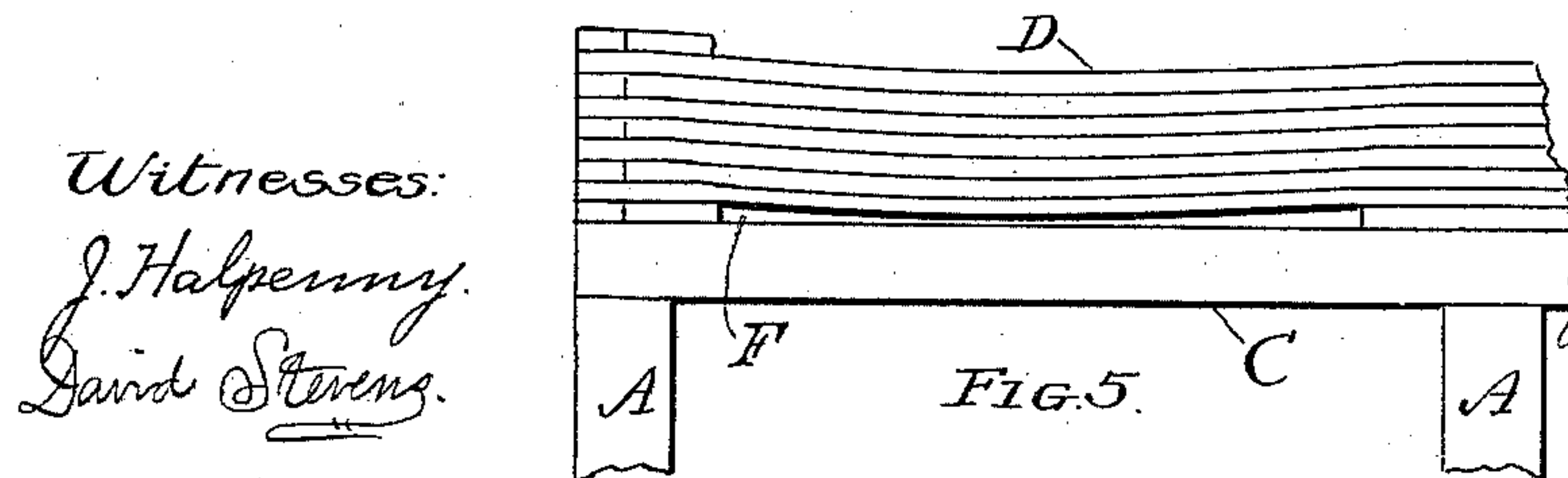
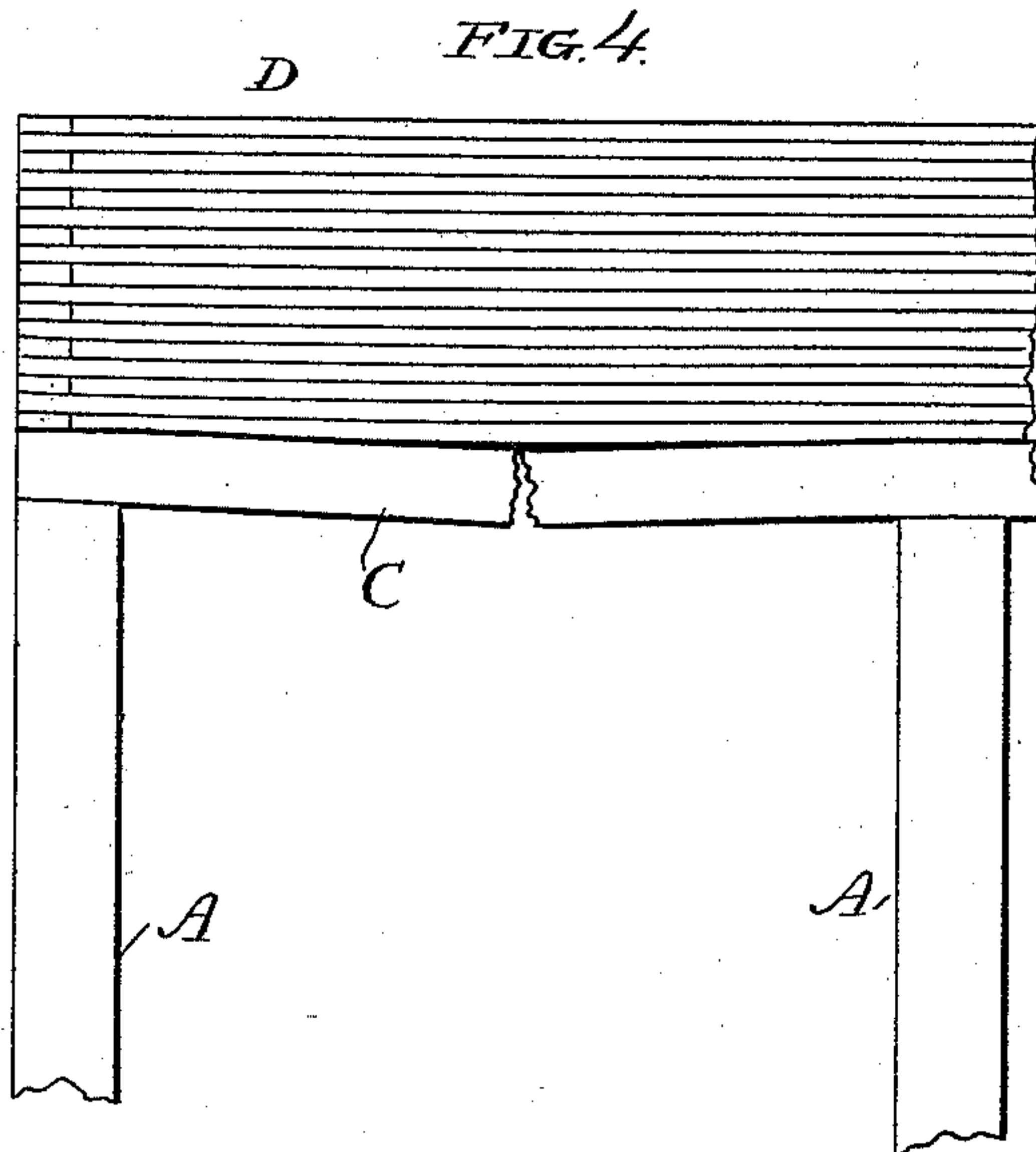
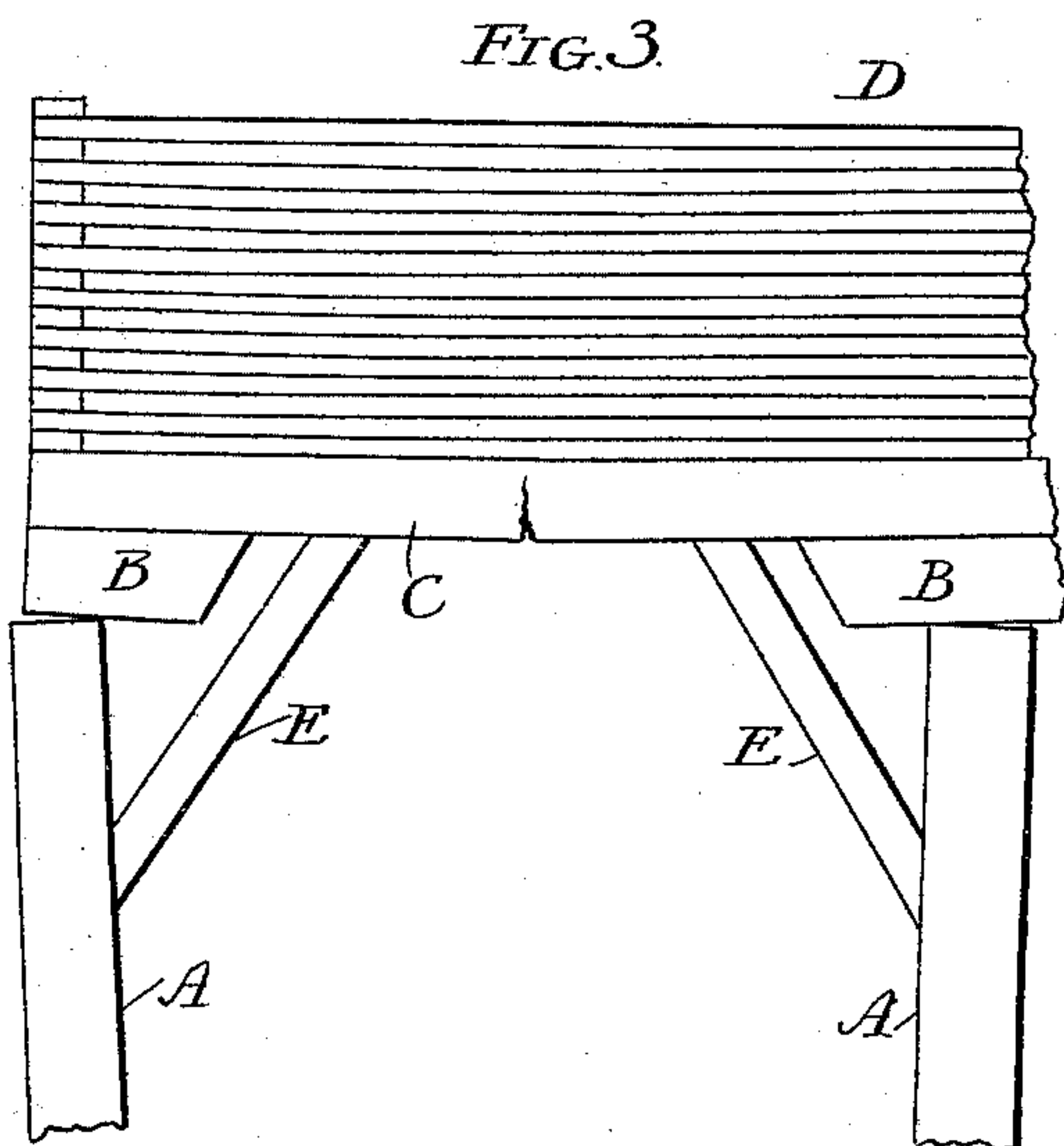
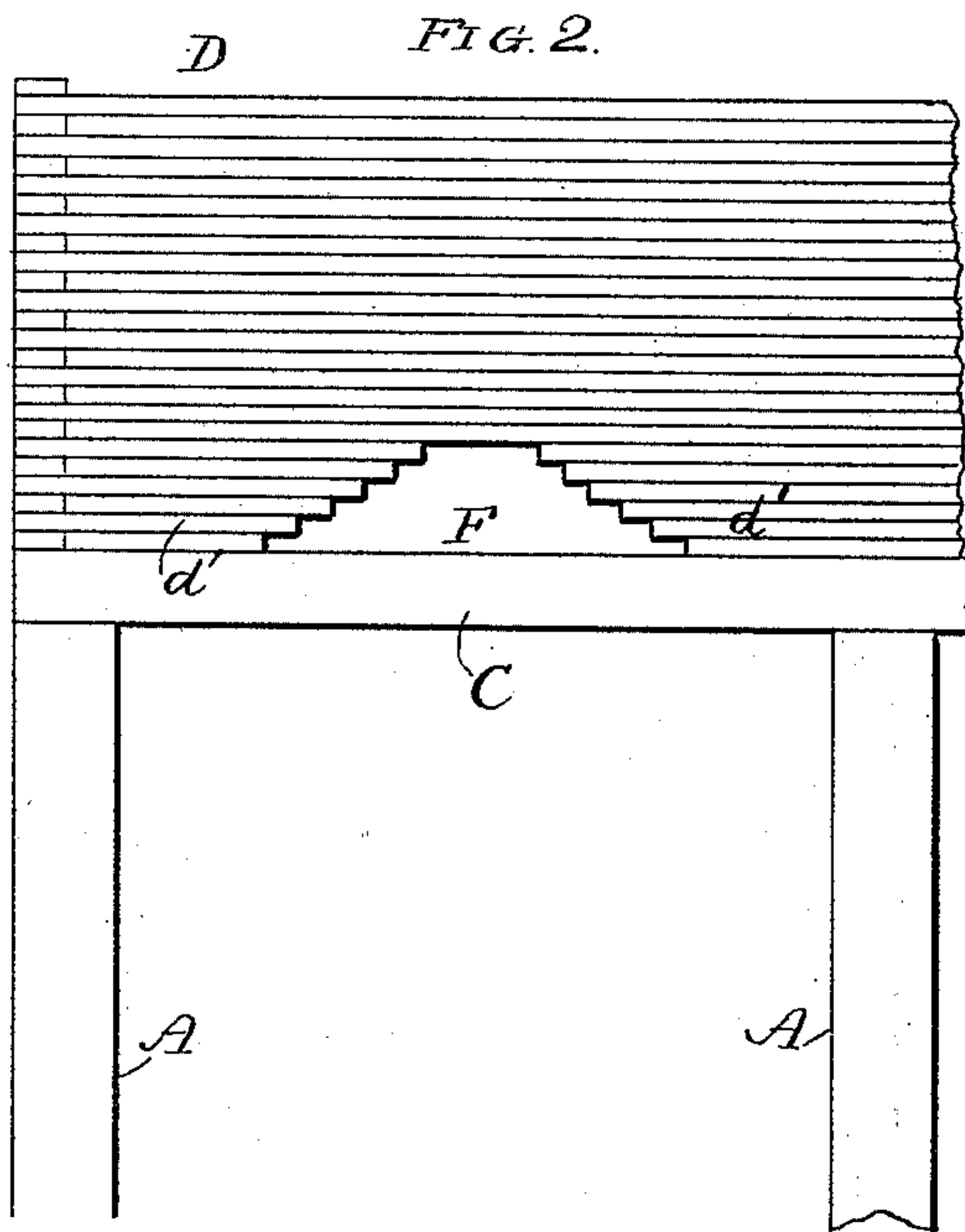
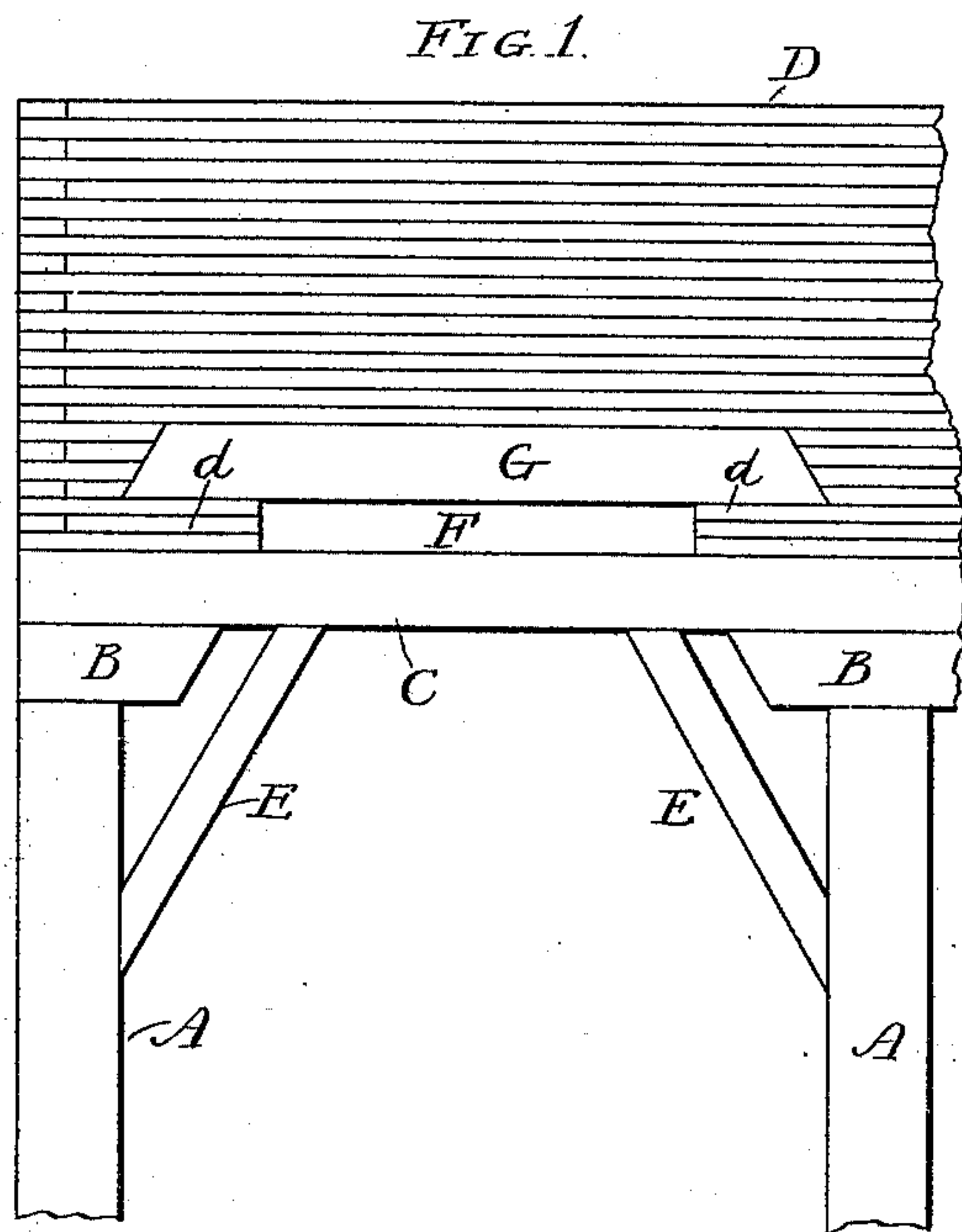


(No Model.)

J. S. METCALF.  
ELEVATOR BUILDING CONSTRUCTION.

No. 422,029.

Patented Feb. 25, 1890.



Witnesses:  
J. Halpernny.  
David Stevens.

Inventor:  
John S. Metcalf  
By Gridley Fletcher  
his Atty.



# UNITED STATES PATENT OFFICE.

JOHN S. METCALF, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE METCALF-MACDONALD COMPANY, OF SAME PLACE.

## ELEVATOR-BUILDING CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 422,029, dated February 25, 1890.

Application filed September 30, 1889. Serial No. 325,530. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN S. METCALF, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Elevator-Building Construction, of which the following is a clear, full, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of a portion of an elevator-building embodying the features of my invention. Fig. 2 is a like view showing a modification of said invention. Fig. 3 is a like view showing one form of the old construction and illustrating its defects. Fig. 4 is another form of an old construction, likewise illustrating its defects; and Fig. 5 is a detail view showing a further modification of my invention.

Like letters of reference in the different figures indicate like parts.

In the construction of elevators it is customary to use planks laid horizontally and flatly upon each other and spiked together to form the walls, in order to resist lateral pressure; but as the planks when laid in this way will not bear a vertical load it is essential that the timbers upon which they are placed should be relieved from the direct strain thereon of the planking, as the sagging of the latter tends to break said timbers midway between their points of support or the vertical posts upon which they rest.

The object of my invention is to relieve said timbers from undue strain and preserve them in proper alignment, thereby in turn preventing the upright supports from being deflected from a vertical position, all of which is hereinafter more particularly described, and definitely pointed out in the claims.

Referring to the drawings, A represents the usual supporting-posts employed in elevator-buildings. Directly upon the top of said posts I preferably place the usual corbels B, Figs. 1 and 3, upon which in turn is laid the plate-beam C, though said plate-beam may rest directly upon the posts, as shown in Fig. 2, without varying the principle of my invention.

The elevator-wall is composed of planks D,

laid flatwise upon each other and spiked together. As a wall when formed in this manner invariably sags between the vertical posts, as represented in Figs. 3 and 4, the plate-beams C are thereby broken, as shown, and an undue load being thrown upon the oblique braces E, the posts A are pushed laterally thereby and either bent or thrown out at the bottom or top—usually the former—thus endangering the safety of the building.

In order to relieve the plate-beam from undue strain at or near the middle, and thus retain it in its normal position, I leave an open space F between the planking and said beam, preferably of about half the length of the beam. This is accomplished by arranging short planks *d d* above the posts and placing a supplemental beam G, Fig. 1, thereon, so as to bridge the space F, or by simply cutting away one or more planks above the middle of the beam. I prefer the former construction, as it costs no more, presents a better appearance, and is therefore more desirable; but in case the latter is used and more than one plank is cut away I recommend that the several planks be made to overlap each other, as shown at *d' d'*, Fig. 2, though I have obtained good results by simply removing one plank, as shown in Fig. 5, so as to permit those above to sag, as shown. When a number of planks are cut away and the ends overlapped, the result is obviously the same as that of a broken or rough arch in a brick wall when the bricks successively overlap each other.

By cutting away the space F above the plate-beam I have found in actual practice that a much greater load may be placed within the building than under the old construction without in any way deflecting the plate-beams C or supports A, and where the plate-beams have already begun to yield to a given load I have, by cutting away the planking and forming a space F, so relieved the plate-beam as to permit a much greater load to be placed in the elevator without any injurious results.

By means of my improvement I have found in practice that the cost of elevator construc-

tion may be greatly lessened, as the timbers employed may be lighter.

Having thus described my invention, I claim—

5 1. The combination, in an elevator-building, of vertical supporting-posts, a plate-beam, a plank wall, and an oblong space between the said wall and the plate-beam midway between the supporting-posts, substantially as  
10 shown and described.

2. The combination, in an elevator-building, of vertical supporting-posts, a plate-beam, a plank wall supported upon said plate-beam, an oblong space between said wall and plate-  
15 beam midway between the supporting-posts, and a supplemental beam built in the wall

for bridging said oblong space, substantially as shown and described.

3. In an elevator-building, the combination, with supporting-posts, of a plate-beam, a plank wall, space F, formed in said wall, and supplemental beam G, substantially as shown and described.

In testimony whereof I have signed this specification, in the presence of two subscribing witnesses, this 12th day of September, 1889.

JOHN S. METCALF.

Witnesses:

D. H. FLETCHER,  
J. HALPENNY.