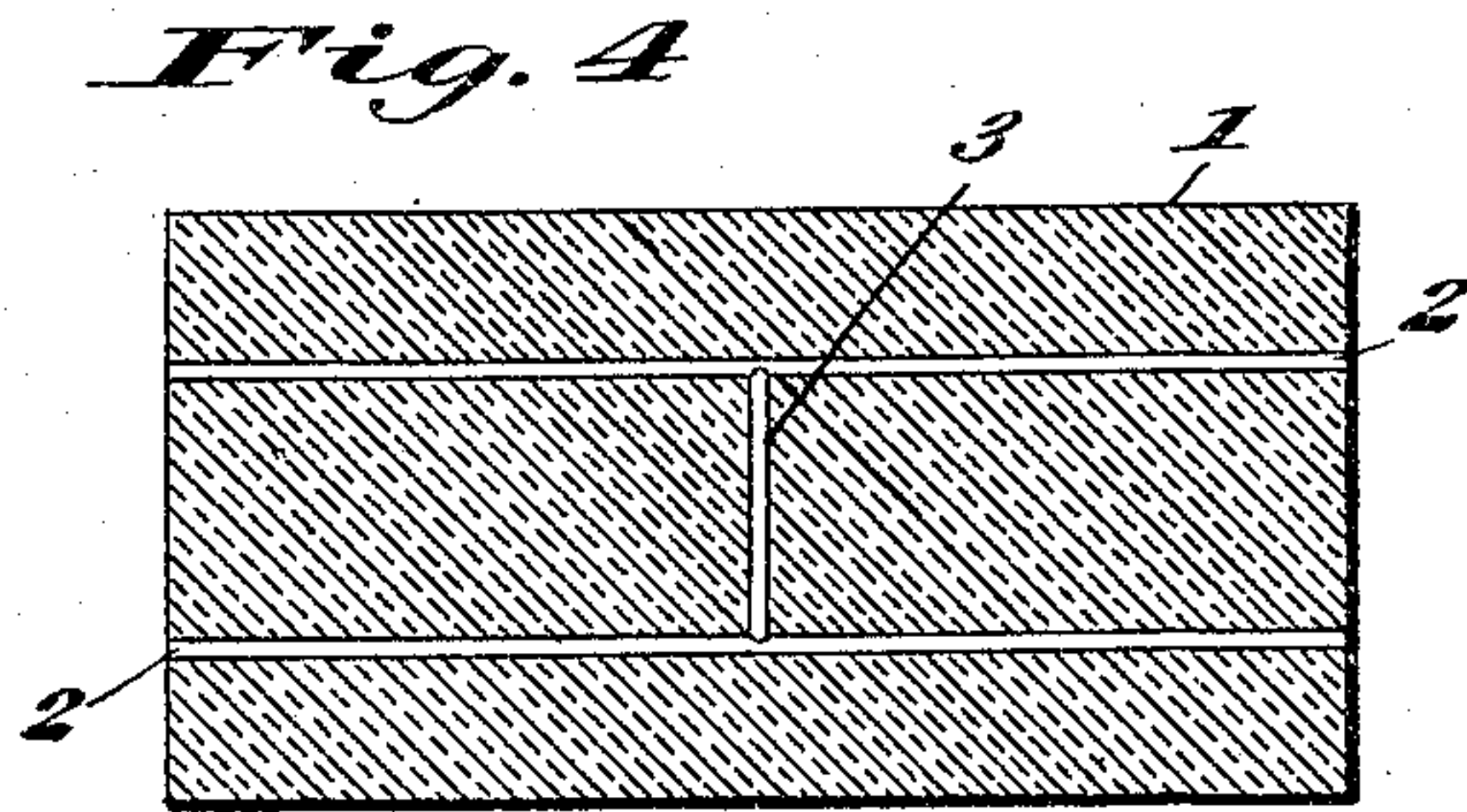
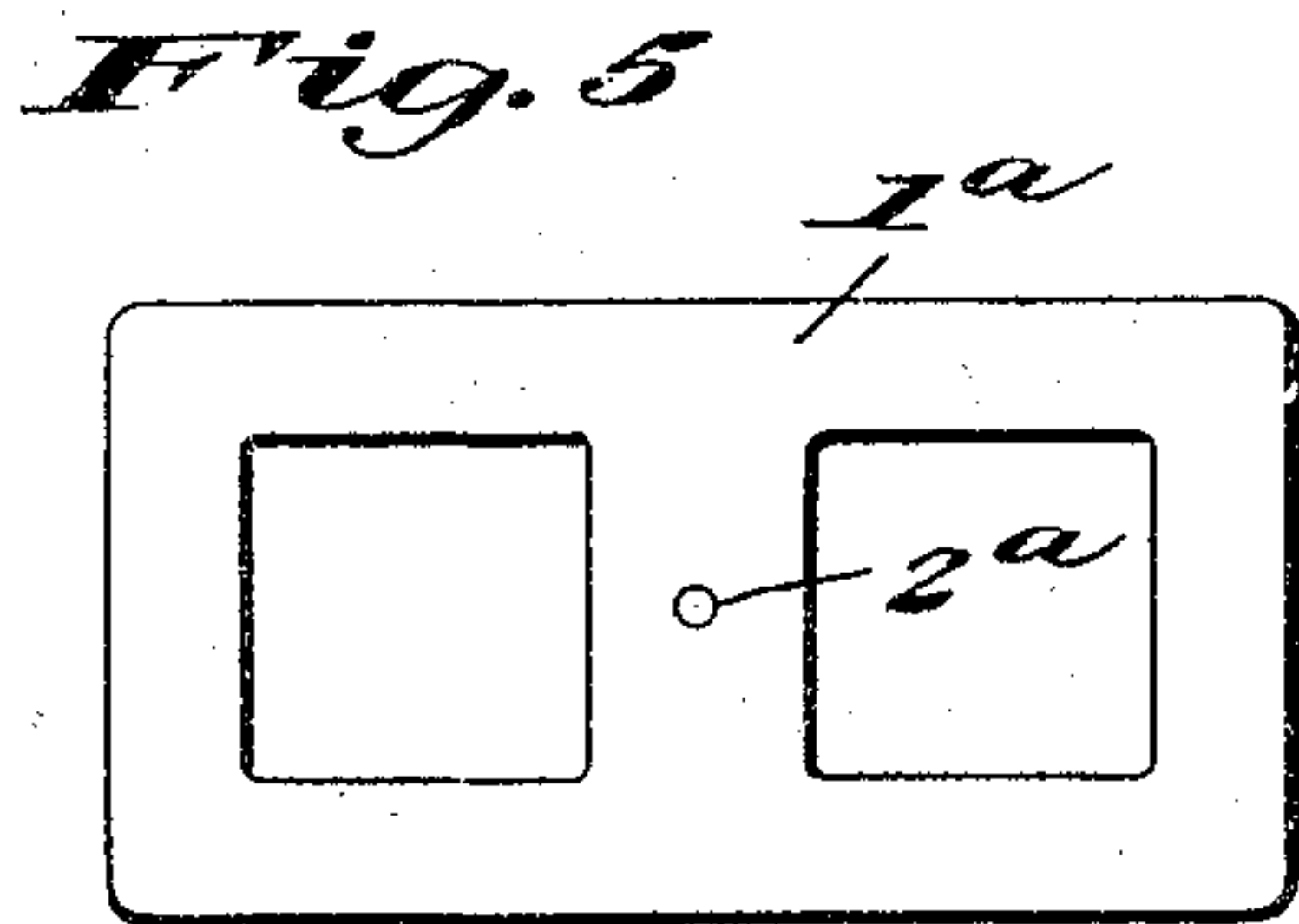
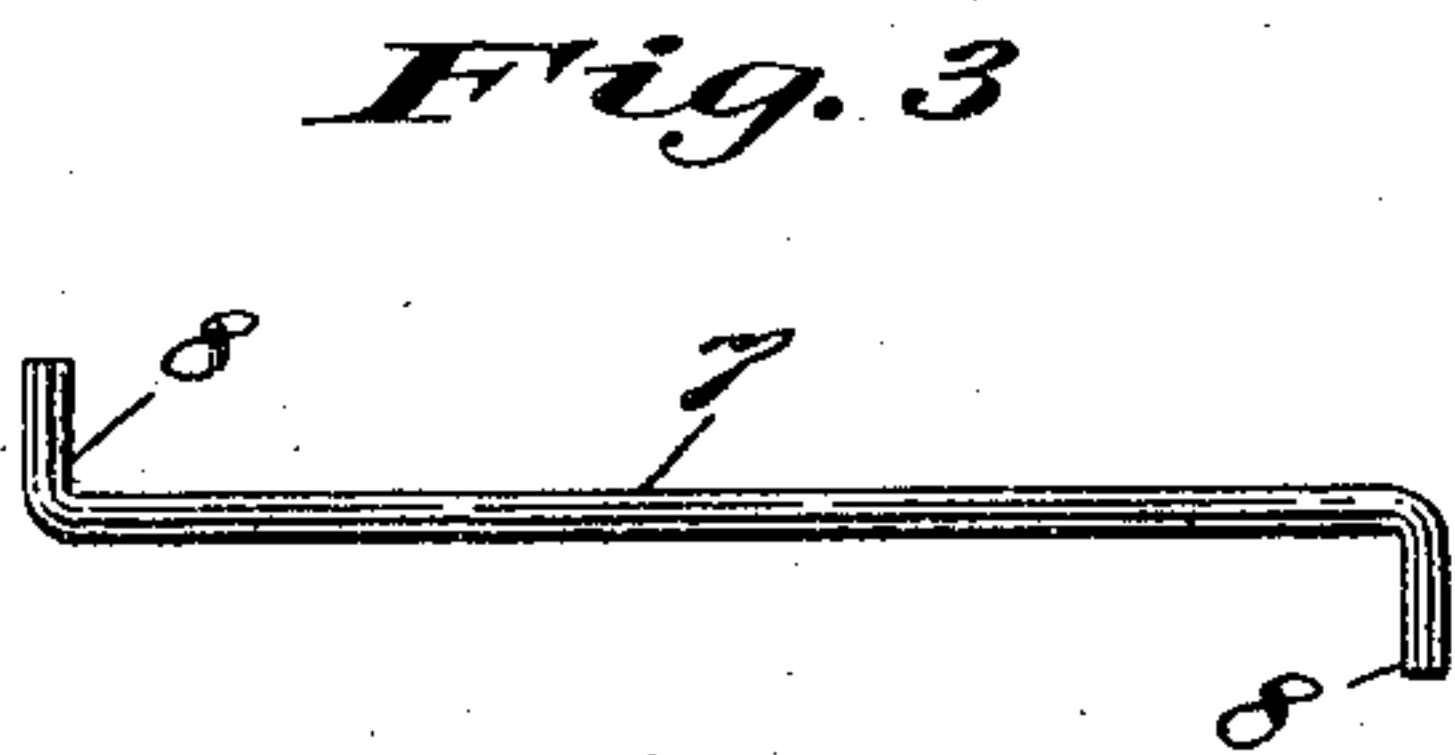
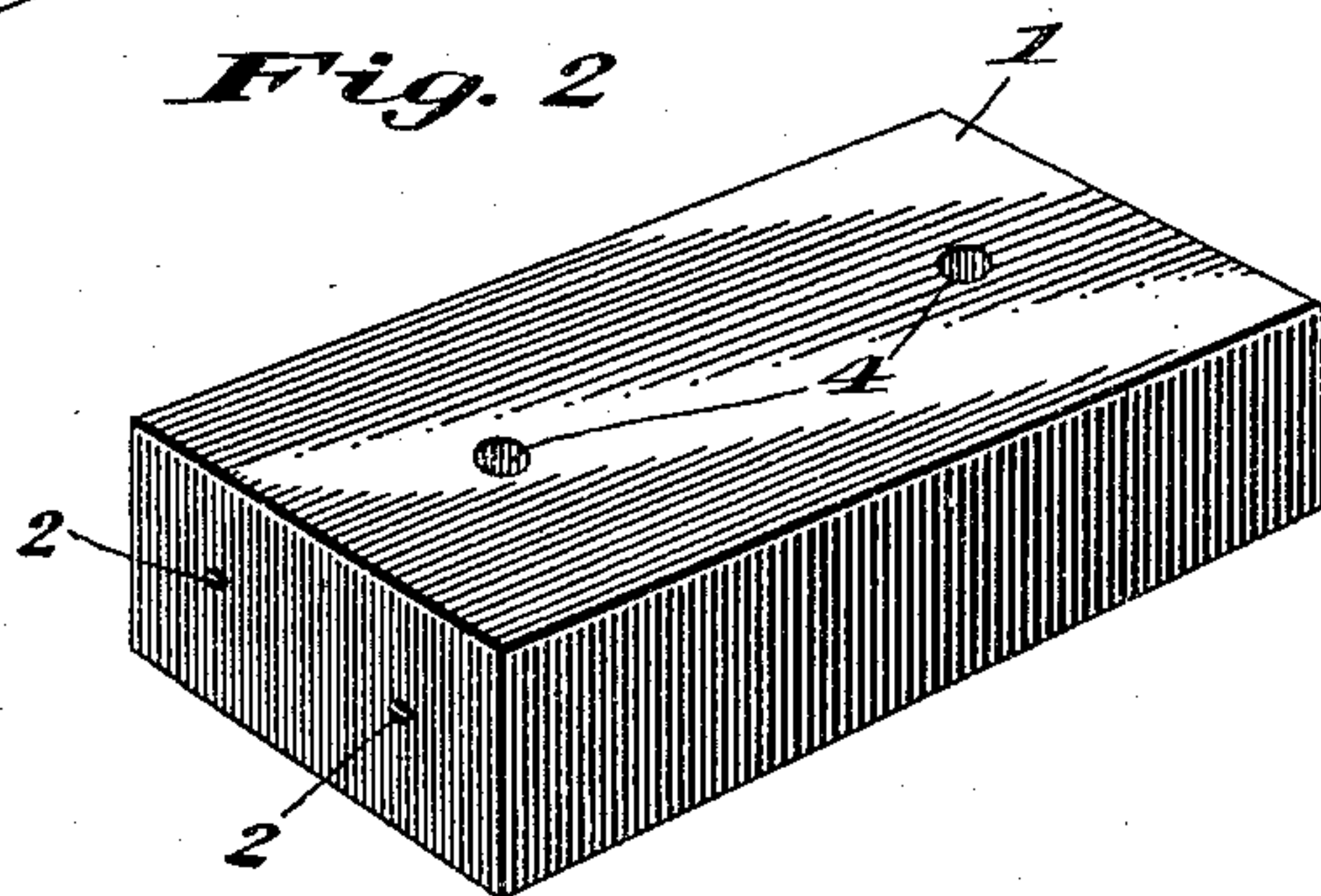
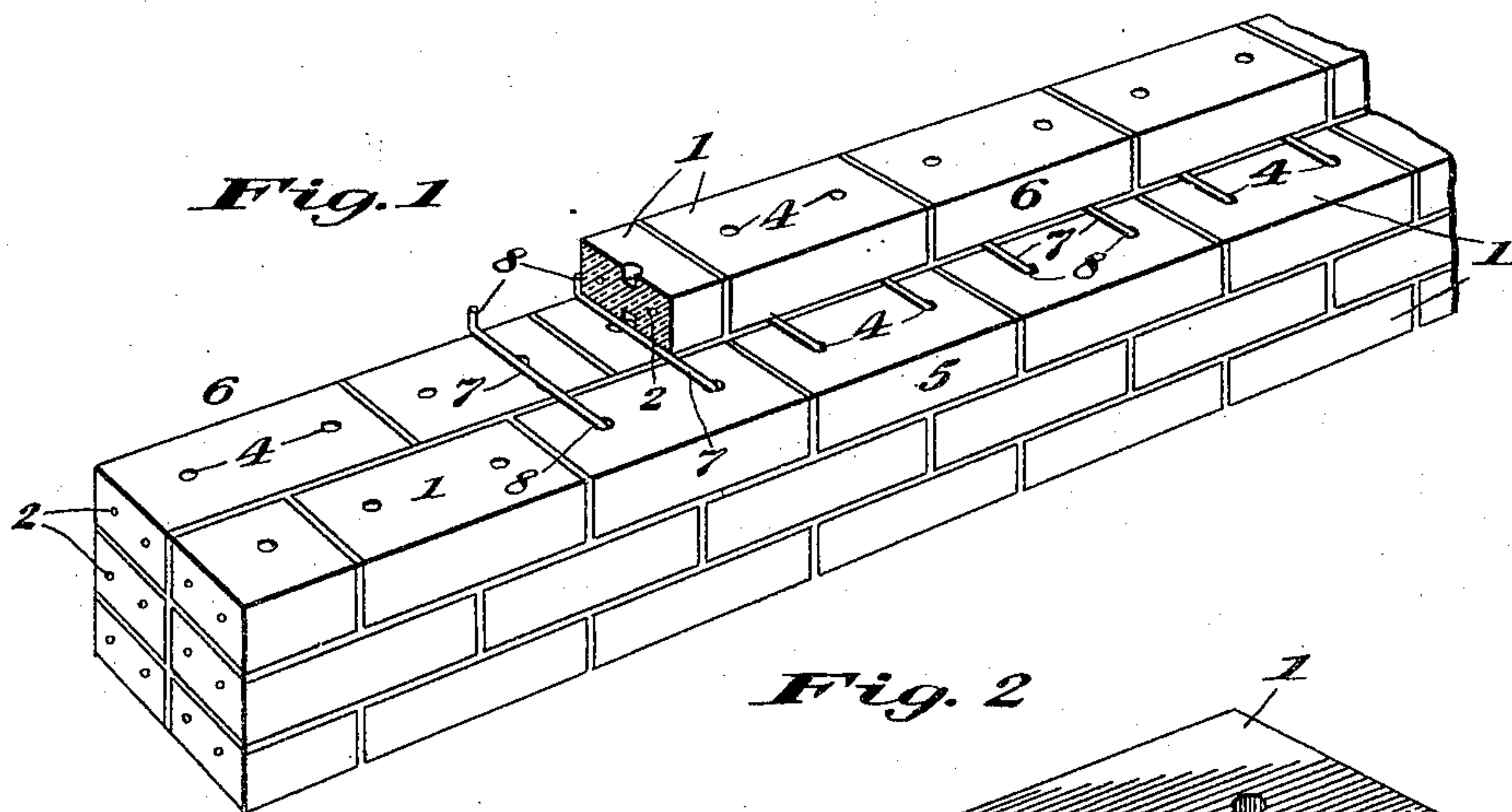


No. 775,703.

PATENTED NOV. 22, 1904.

L. P. HAZEN.
BUILDING STRUCTURE.
APPLICATION FILED MAR. 31, 1904.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

LEVI P. HAZEN, OF CINCINNATI, OHIO.

BUILDING STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 775,703, dated November 22, 1904.

Application filed March 31, 1904. Serial No. 200,907. (No model.)

To all whom it may concern:

Be it known that I, LEVI P. HAZEN, a citizen of the United States of America, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Building Structures, of which the following is a specification.

The present invention relates to an improved method of strengthening double-walled building structures, and contemplates the use of a novel bonding means combined with the elements of the structure in such a manner as to positively reinforce and brace the same to insure strength and resistance to strain.

More particularly, the invention comprises an arrangement of bricks in inner and outer courses and binding means so constructed as to engage within the bricks of one course and with the face of the other course, as will be more particularly set forth in the following description and claims.

The novel features of the invention will be carefully defined in the claims.

In the accompanying drawings, which serve to illustrate my invention, Figure 1 is a perspective view showing a wall embodying my improvements, portions of said wall being broken away and shown in section to better illustrate the invention. Fig. 2 is a perspective view showing a detached building block or brick adapted for use in my improved structure. Fig. 3 is a view showing one of the bonds or ties employed in the improved structure for bonding or tying together the inner and outer courses of brick or blocks in the walls. Fig. 4 is a sectional view taken transversely and longitudinally through one of the improved building blocks or bricks and showing the internal reinforcing and strengthening means thereof. Fig. 5 is an end view showing a modified form of building block or brick, which is made in the form of a hollow tile.

As shown in the views, the improved structure is formed from rectangular blocks or brick laid in courses in the ordinary way. Each of the blocks or brick is of the form shown in Fig. 2, and I preferably strengthen each brick or block in course of manufacture by embedding in it a reinforce, which

may be formed of a metal wire or piece of proper form and size, and in the drawings, wherein I have indicated the brick or blocks at 1 1, I have shown such a reinforce at 2 in the form of a pair of metal strips or wires extended parallel to each other along opposite sides of each brick or block and embedded about midway of the thickness thereof, said wires or strips 2 being connected centrally of the brick or block by means of a transverse tie or brace 3. The reinforce thus produced is well adapted to strengthen the bricks or blocks and prevent them from cracking or being broken previously to laying in a wall, and after they are in position in the wall the reinforces add materially to the strength and resisting qualities thereof. Each brick or block 1 is also provided in its upper and lower surfaces with openings or sockets 4 4, there being, as herein shown, two such sockets in the upper and lower surfaces of each brick or block, although I do not limit myself to this arrangement exclusively, since, if desired, the sockets may be otherwise disposed.

In laying the brick or blocks in a wall in the ordinary manner I employ in connection with the improved blocks or brick metallic ties or bonds 7 7, which are herein shown as in the form of stout wires or rods, having their extremities 8 8 bent in opposite directions at right angles to the direction of the main central or body portions of the ties or bonds, and in building a wall according to my invention the angular downwardly-bent end 8 upon one end of each tie or bond 7 is engaged in one of the sockets or recesses 4 in the top surface of a brick or block 1 of the outer course 5 of the wall or structure, the horizontally-extended body portion of the tie or bond being extended across the upper surface of a brick in the aligned outer course, with its upwardly-extended opposite end 8 adapted to engage upon the inner surface of the next higher inner course 6 at the lower part of a brick in said inner course. The thickness of each bond or tie 7 will be such as to permit it to be embedded within the mortar between the bricks or blocks, and owing to the engagement of the oppositely-bent ends 8 8 of the ties or bonds with the inner and outer

courses 5 and 6 in the structure it will be evident that the said inner and outer courses will be securely tied and bonded together, so as to add materially to the strength of the wall and enable it to withstand greatly-increased lateral strains.

It will be evident from the above description of my improvements that the structure built according to my invention is of an extremely strong and resisting character and is also comparatively inexpensive, and it will be also obvious from the above description of my improvements that the improved structure is capable of some modification without material departure from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the precise form and arrangement of the several parts of the device herein set forth in carrying out my invention in practice. Nor do I desire to be understood as limiting myself to the employment of my improvements in connection with building blocks or brick of rectangular form alone, since it will be evident that other forms of building material may be bonded or tied together according to my invention. For example, in Fig. 5 of the drawings I have illustrated a hollow tile 1^a, such as is commonly used in building and wherein instead of the double arrangement of reinforces 2 2 (shown in Figs. 1, 2, and 4) there is employed a single central wire reinforce 2^a.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is--

1. In a building structure of the character described, the combination with a series of bricks provided with recesses therein and laid in inner and outer courses, a series of metallic bonds extending transversely of the structure between the courses, said bonds having oppositely-disposed right-angularly-bent end portions, one of said right-angular portions of each bond engaging in a recess of the outer course and the oppositely-bent portion of the tie engaging the inner face of the inner course, substantially as described.

2. In a structure of the type set forth, a series of bricks arranged in inner and outer courses having recesses formed in their upper faces, metallic ties extending transversely between the courses of the bricks, said ties being provided with oppositely and outwardly extended end portions being bent at right angles to the body of the ties, the bent portions of said ties being adapted to engage in the recesses of the brick and with the inner face of the inner course, substantially as described.

Signed at Cincinnati, Ohio, this 29th day of March, 1904.

LEVI P. HAZEN.

Witnesses:

JOHN ELIAS JONES,
WILLIAM SCHUCHARDT.