No. 637,937.

Patented Nov. 28, 1899.

P. F. KESTING.

WOODEN WALL.

(Application filed Jan. 24, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. I.

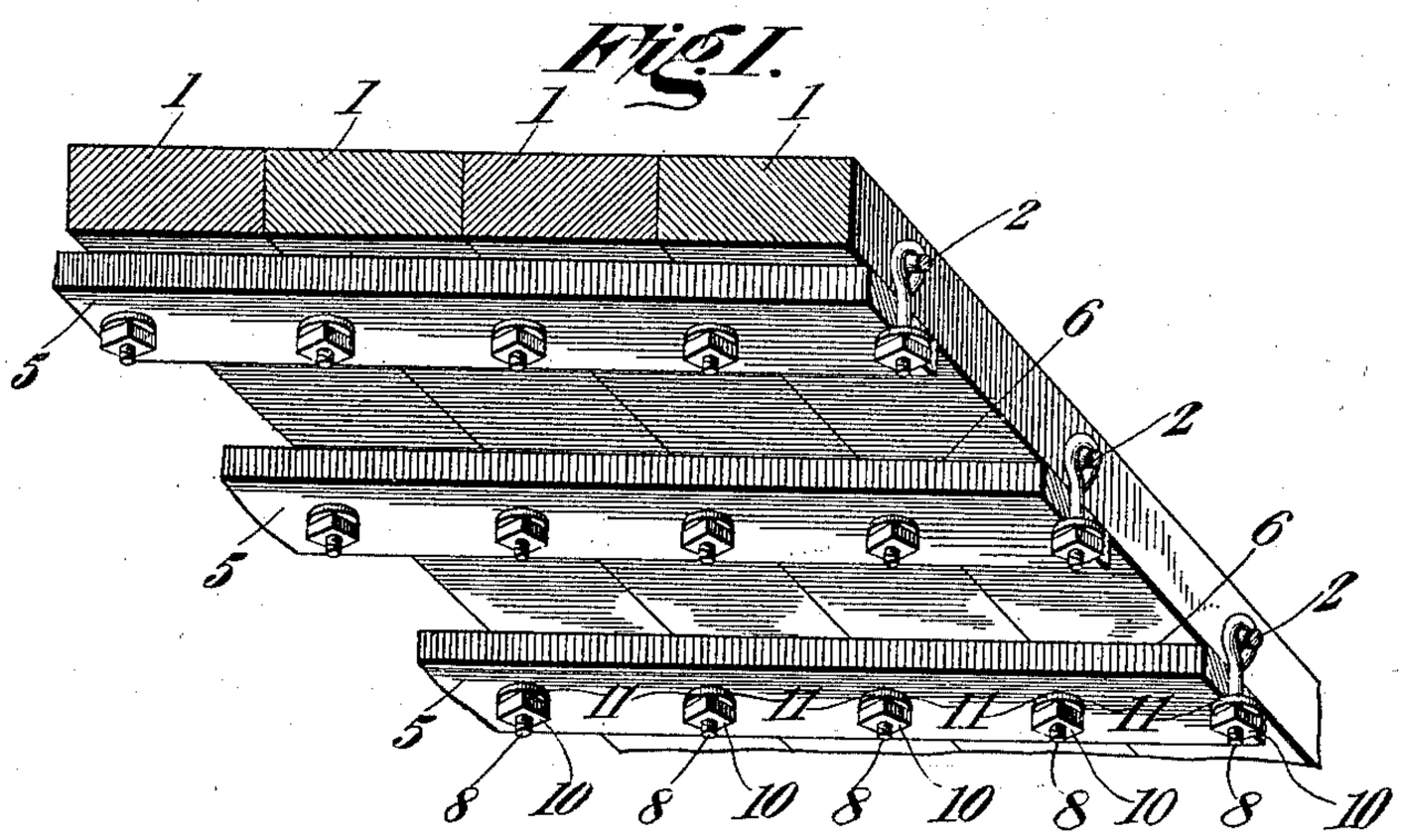

Fig. II.

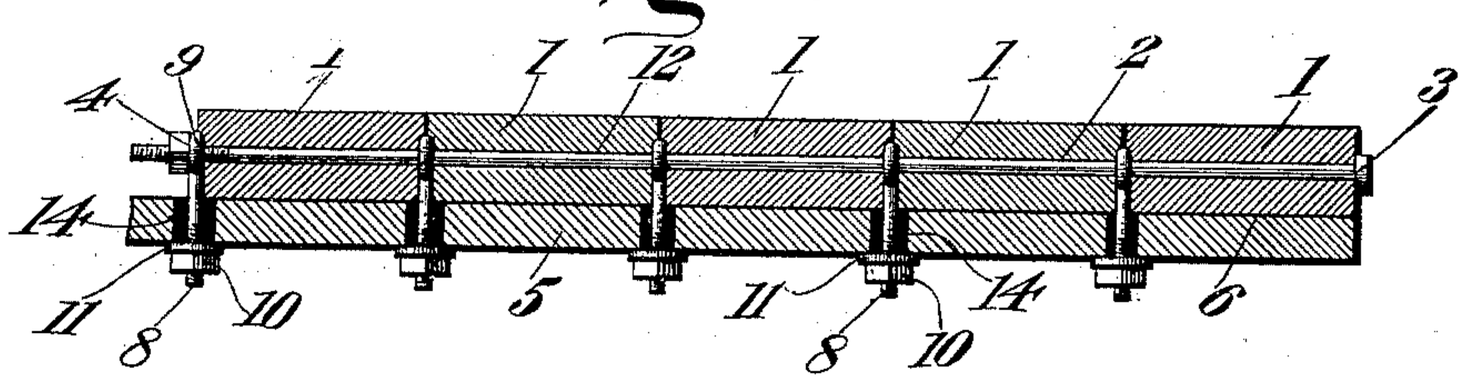

Fig. III.

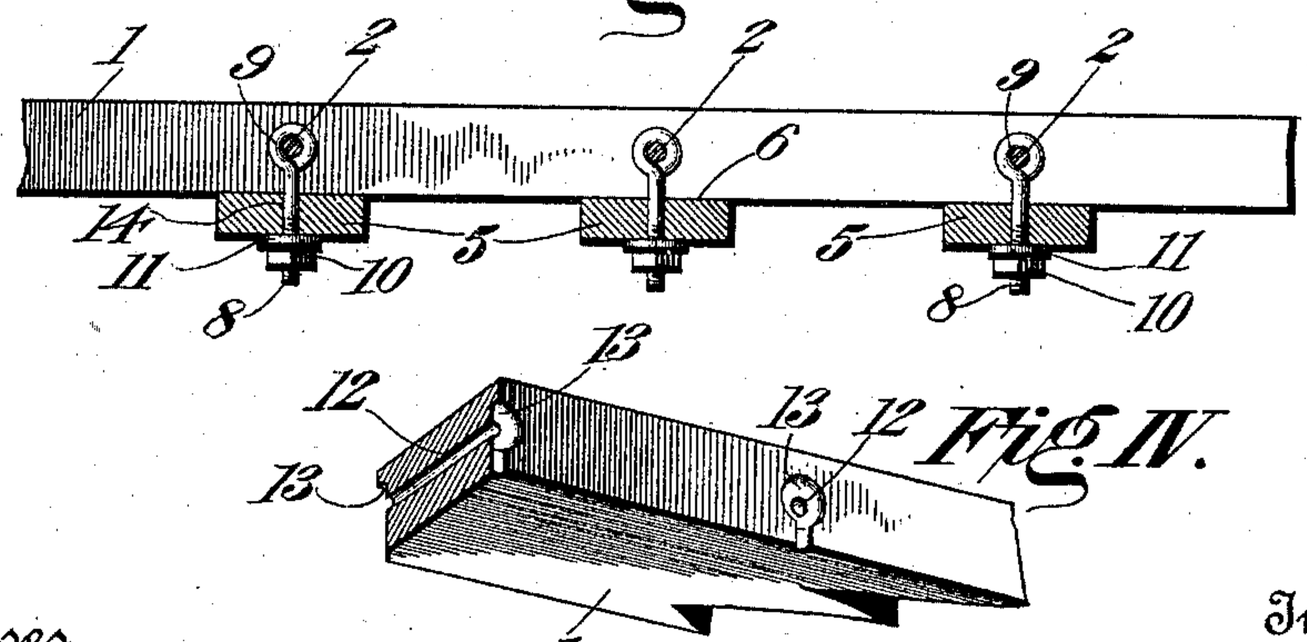

Fig. IV.

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Fig. V

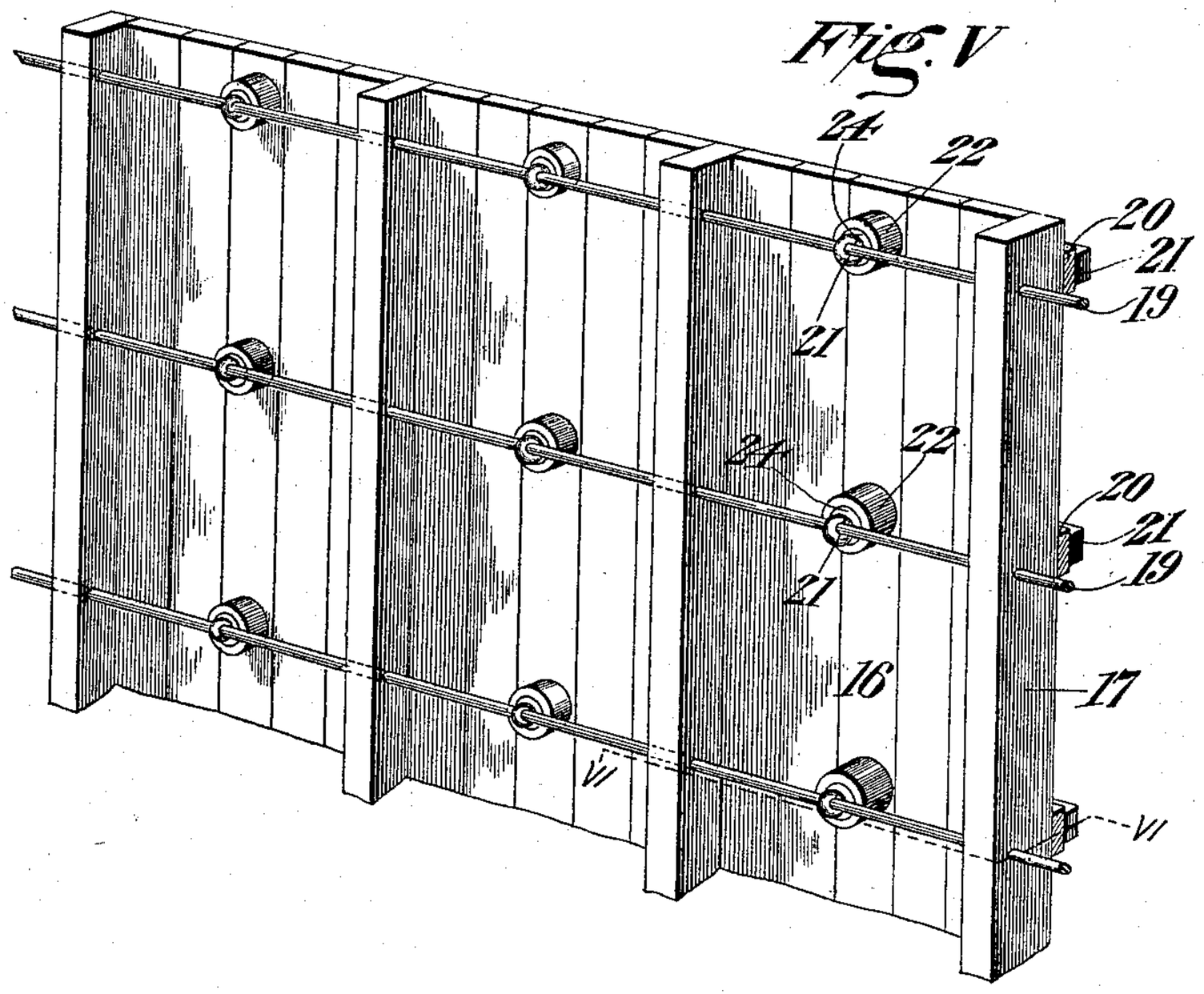


Fig. VI

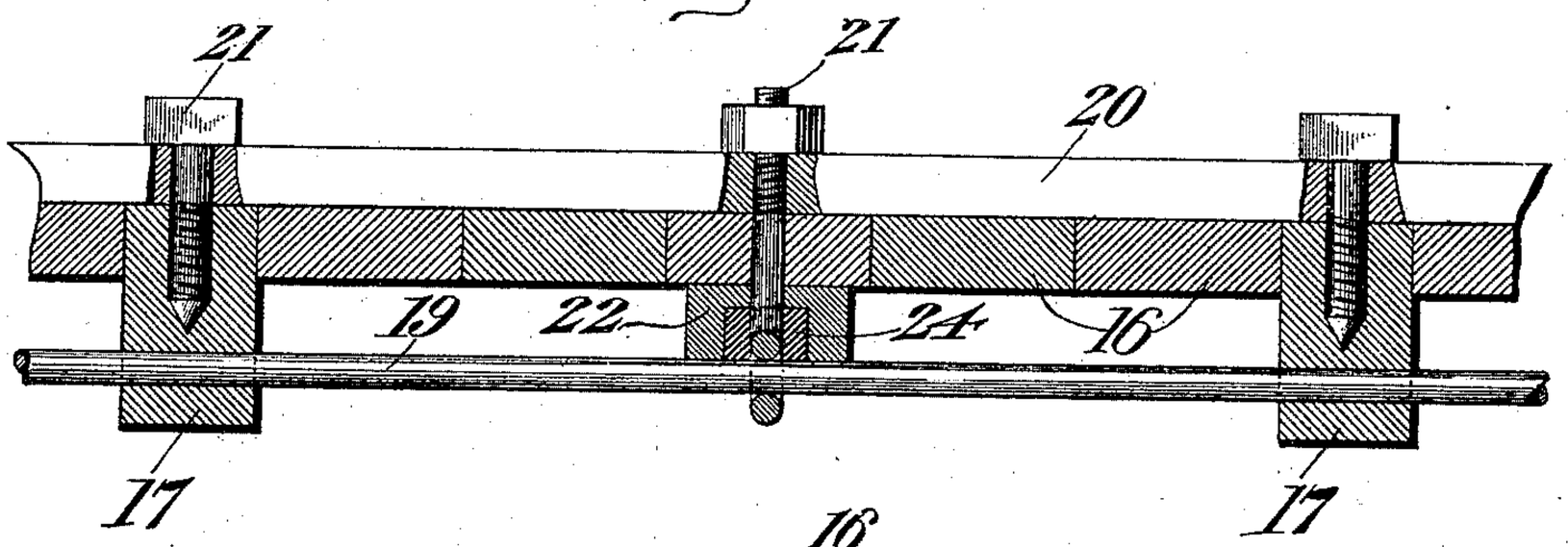
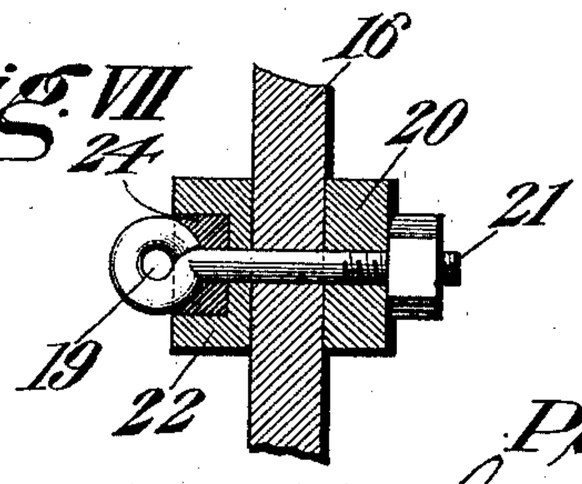


Fig. VII



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UNITED STATES PATENT OFFICE.

PAUL F. KESTING, OF OTTAWA, KANSAS.

WOODEN WALL.

SPECIFICATION forming part of Letters Patent No. 637,937, dated November 28, 1899.

Application filed January 24, 1899. Serial No. 703,234. (No model.)

To all whom it may concern:

Be it known that I, PAUL F. KESTING, of Ottawa, in the county of Franklin, State of Kansas, have invented certain new and useful Improvements in Wooden Walls, of which the following is a complete specification, reference being had to the accompanying drawings.

One object of my invention is to produce an improved wooden wall which in its preferred form possesses one surface smooth and entirely free from nails, nail-heads, or any metal part whatsoever. On account of the smoothness of its surface referred to my wall structure is particularly desirable for the construction of portions of buildings or cabinet-work designed to present a highly-polished surface—such, for example, as floors, wainscoting, and the like. The smoothness of the surface and the absence of nails or the like may be obtained through the employment in a certain manner of a series or system of co-acting binding members. The binding members which I prefer to employ consist, as will hereinafter more in detail appear, of a series of connected bolts. Through the employment of bolts, with their threaded nuts, it is practicable to readily separate the parts as often as required, and my invention therefore comprehends a knockdown wooden wall or wall which may be readily separated into its constituent members for the purpose of repairs, shipment, or the like. Within the term "wooden wall" I include all forms of wall structure of wood or wood-like material. Without attempting to fully enumerate all of such structures contemplated, it may be well to state that the term is designed to include in buildings walls both vertical and horizontal—that is to say, side walls, ceilings, and floors. The term also includes walls of boxes, shipping-crates, and cabinet-work generally. Moreover, the term is not limited to a plane surface, but includes curved surfaces, such as the walls of barrels or casks, for example. By way of summary in this connection it may be stated that the term "wall" wherever it is employed throughout this specification is used in its broadest possible significance.

In the accompanying drawings, Figure I is a perspective view of a section of wall constructed in accordance with my invention and taken from the side upon which the alining members are exhibited. Fig. II is a sectional view of a portion of my wall, showing a series of binding members in elevation. Fig. III is a side elevation of the matter illustrated in Fig. I. Fig. IV is a perspective view, partially in section, of a fragment of wall member, showing the countersunk recesses for the eyebolts and section through the bore provided for one of the stay-bolts. Fig. V is a perspective view of a modified form of wall-section embodying my invention. Fig. VI is a horizontal section on the line VI VI of Fig. V. Fig. VII is a detail sectional view showing the eyebolt at right angles to the view of it shown in Fig. VI.

Referring to the numerals on Figs. I to IV of the drawings, 1 indicates each of a series of boards, planks, or strips of wood, which, being arranged side by side, and preferably in close juxtaposition, constitute a wall proper, and which for that reason I shall hereinafter designate as "wall members." The wall members may be arranged in series, each series being composed of any preferred number of members of any desired dimensions. The dimensions of each member and the number of members in each series are varied materially in different structures. For example, a series of members of required dimensions may be employed for one side of a box, for a floor, or for a wainscoting, or a series may constitute a part of a floor or a part of a wainscoting.

The several wall members 1, that are assembled into a wall-section for whatever purpose that wall-section is designed to be employed, are united edgewise by transverse binding members, preferably extending, respectively, through the several assembled wall members. The preferred form of transverse binding members is that illustrated—to wit, that of bolts, which by analogy to similar bolts in cognate arts I shall hereinafter designate as "stay-bolts" 2. The stay-bolts may be employed at frequent intervals, the distances apart being variable to suit the requirements of different structures, and each bolt is preferably provided upon one end with a head 3 and on its other and threaded end with a nut 4. The stay-bolts serve in themselves to assemble the wall members and to unify

them, collectively, into a single structure; but in order to lend rigidity to the structure and to retain the outer surface of the members in a uniform, plane, and smooth surface I prefer to employ, in connection with them, those which I shall call "alining members." Of the alining members I prefer to employ two species, one being members against which the wall members are braced and the other members by which the wall members, preferably through mediation of the stay-bolts, are attached to the first-named alining members. The first-named members, which for convenience of designation I shall call "braces," consist, preferably, of pieces of wood 5, having, respectively, trued surfaces 6 abutting against the respective surfaces of the wall members 1, to which they are applied. The members by which the braces 5 are attached to the wall members through the mediation of the stay-bolts preferably consist of eyebolts 8, each being provided at one end with an eye 9, through which a stay-bolt is inserted, and at the opposite threaded end with a nut 10 and subsidiary washer 11.

Inasmuch as the eyebolts serve to preserve the surfaces of the several wall members in a true plane, and as the form of the bolt is susceptible of variation, I prefer for the purposes of this specification to designate the members which the eyebolts represent by the broader term "truing-bolts." It is proper here to note that while in practice the stay-bolts, as well as the truing-bolts, would probably be usually provided with nuts for securing them in their respective positions the nuts are intended merely as representatives of suitable fastening mechanism, for which any other fastening mechanism may be substituted.

Each wall member is provided at suitable intervals with a transverse bore 12, designed to receive a stay-bolt 2. Upon the end, preferably each end of each bore 12 in the edge of each wall member, I provide a countersunk recess 13 of suitable contour to accommodate a truing-bolt 8. The threaded ends of the truing-bolts respectively extend through apertures 14 provided for them, respectively, in the braces 5. These apertures for the purposes of adjustment are preferably slightly elongated, as clearly illustrated in Fig. II.

In practice the several wall members 1 of a series constituting a wall-section are united by the insertion of the stay-bolts through the bores 12 provided for them, the truing-bolts being first set in place, so that the eyes 9 thereof, respectively, will receive the stay-bolts as they are driven into place. After the members 1 are assembled, with their stay-bolts and truing-bolts in position, the braces are then applied against the wall members, their apertures 14 receiving the ends of the truing-bolts. The fastening devices represented, respectively, by the nuts 4 and the nuts and washers 10 and 11 are then applied, and the parts by the tightening of the nuts are secured firmly and rigidly together.

The several members of a wall-section may be set up in the position they are to occupy in use, or, as in the manufacture of boxes, they may be otherwise assembled or made ready to assemble and afterward built into the structure for which they are designed, as required.

As will be obvious from the foregoing description, the parts may be disassembled whenever required by the loosening of the nuts 10 and 4, respectively, and the withdrawal of their bolts, or the nuts 10 may be slightly loosened and then by the removal of the nuts 4 the stay-bolts 2 may be withdrawn, leaving the eyebolts, with their nuts attached, upon the braces 5. It is practicable also to insert the eyebolts into position without taking off the nuts 10 by passing the eyes 9 through the oblong apertures 14 and then turning the bolts in the position to enter the countersunk recesses 13 provided for them.

As has been specified, the embodiment of my invention preferably comprehends an assemblage of wall members, transverse binding members uniting the wall members and alining members. It has been specified that the binding members represented by the stay-bolts preferably extend through the several wall members 1 and that the wall members are arranged side by side and preferably in close juxtaposition. While, as specified, that is the preferred form of embodiment of my invention, yet my invention comprehends the employment of binding members which do not pass through and are not concealed by all of the wall members, but only a portion thereof. In Fig. V, I illustrate this modified form of my invention. In this figure, 16 indicates certain wall members and 17 other wall members, which are distinguished from the members 16 by possessing greater thickness and less width. Stay-bolts 19 connect the wall members 17 and, passing through them, are separated from the surface of the intermediate wall members 16. The several wall members are held in alinement by the employment of alining members similar in structure and function to those already described. Such alining members consist of braces 20, corresponding to the braces 5 previously specified, and truing-bolts 21, corresponding to the truing-bolts 8 above referred to. The truing-bolts 21 may pass through washers 22, located, respectively, between the surface of the wall members 16 and the stay-bolts. These washers may be made of suitable material, rubber being employed for some purposes—as, for example, in the construction of roofs. It has already been specified that eyebolts are preferred to be employed as truing-bolts. This is particularly true where the thickness of the wall members is not sufficient to afford secure anchorage for ordinary screw-bolts; but in the structure illustrated in Fig. V the truing-bolts which connect the braces 20 with the wall members 17 may be simply screw-bolts or ordinary wood-screws 23, which, passing

through the braces 20 into the wall members 17, perform the office of truing-bolts, being connected not only to the braces and wall members 17, but, through the mediation of the wall members, with the stay-bolts 19, with which in practice they are intended to coöperate as individuals of the alining members.

Where rubber washers 22 are employed, it is not necessary to employ rubber throughout, but, the purpose of the employment of rubber washers being to prevent the penetration of moisture through the bores provided for the truing-bolts in the wall members 16, it is sufficient to employ a washer whose outer covering is made of metal or wood and which is provided with a core 24 of rubber.

What I claim is—

1. A wooden or like wall consisting of a plurality of wall members, united by transverse binding members, passing through and concealed by the several wall members, and alining members secured to the wall members, respectively.

2. A wooden or like wall consisting of a plurality of wall members, united by transverse binding members, passing through and concealed by the several wall members, and alining members secured to the wall members, through the mediation of the transverse binding members to which the alining members are immediately attached.

3. A wooden or like wall consisting of a plurality of wall members united by stay-bolts, truing-bolts connected with the stay-bolts, braces through which the ends of the truing-bolts pass, and means for securing the truing-bolts to the braces.

4. A wooden or like wall consisting of a plurality of wall members, stay-bolts passing through and concealed by the several wall members, truing-bolts attached to the stay-bolts, and located between contiguous faces of the wall members, braces through which the ends of the truing-bolts project, and means for securing the braces to the stay-bolts.

5. A wooden or like wall consisting of a plurality of wall members, united by a series of stay-bolts, passing through and concealed by the several wall members, truing-bolts secured to the stay-bolts between the wall members, respectively, recesses in the wall members for the reception of the truing-bolts, braces provided with slots through which the ends of the truing-bolts pass, and means for securing the ends of the truing-bolts to the braces.

6. As a new article of manufacture, a wall member provided with a series of transverse bores adapted to receive stay-bolts, and terminating, respectively, in countersunk recesses for the reception of truing-bolts, substantially as and for the purpose specified.

In testimony of all which I have hereunto subscribed my name.

PAUL F. KESTING.

Witnesses:
JOHN W. DEFORD,
G. W. ST. JOHN.