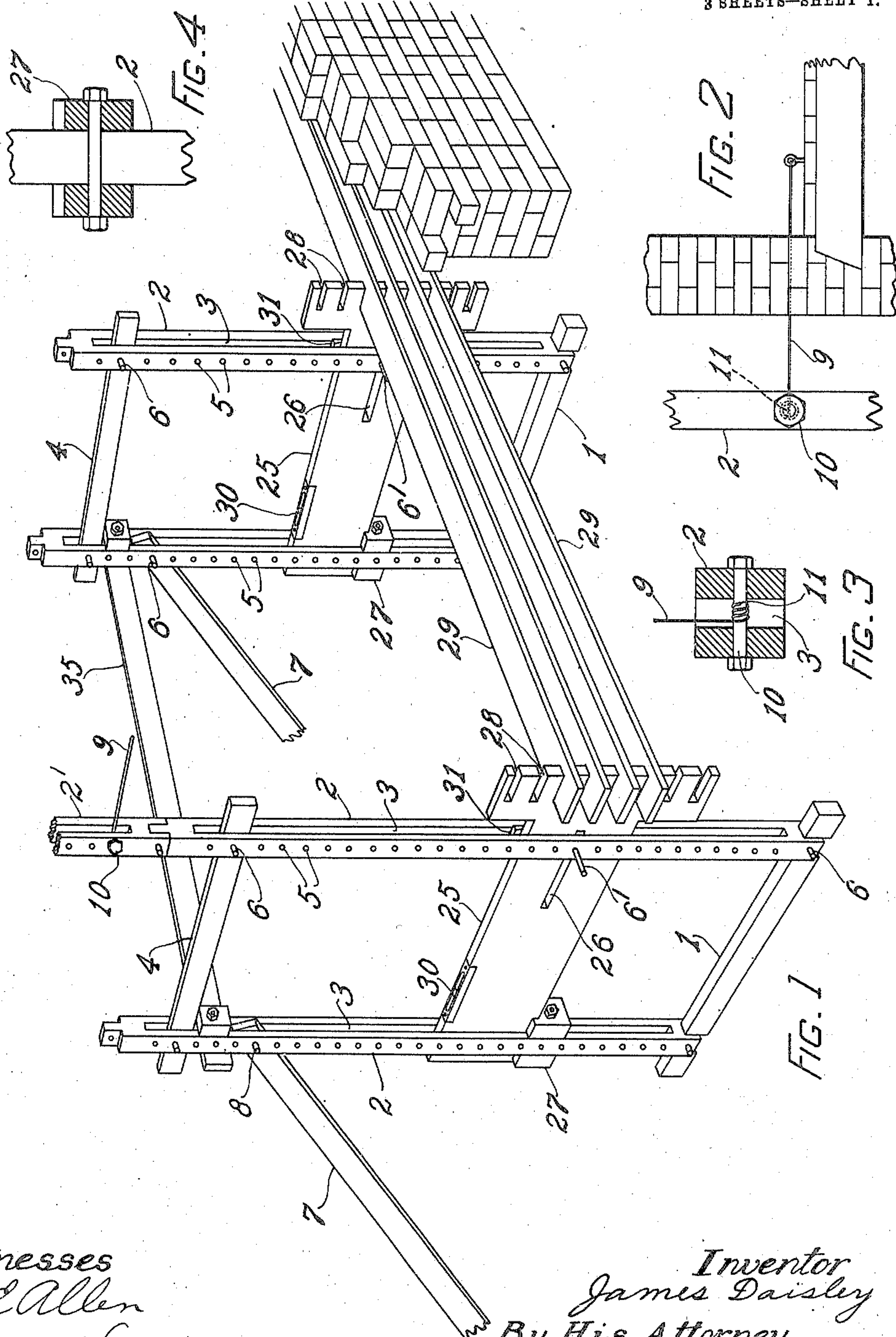


J. DAISLEY.  
 BUILDER'S APPARATUS.  
 APPLICATION FILED OCT. 23, 1907.

Patented Aug. 9, 1910.

3 SHEETS—SHEET 1.

966,801.



Witnesses  
 L. Allen  
 M. B. Hope

Inventor  
 James Daisley  
 By His Attorney  
 Everett Kent

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3 SHEETS—SHEET 2.

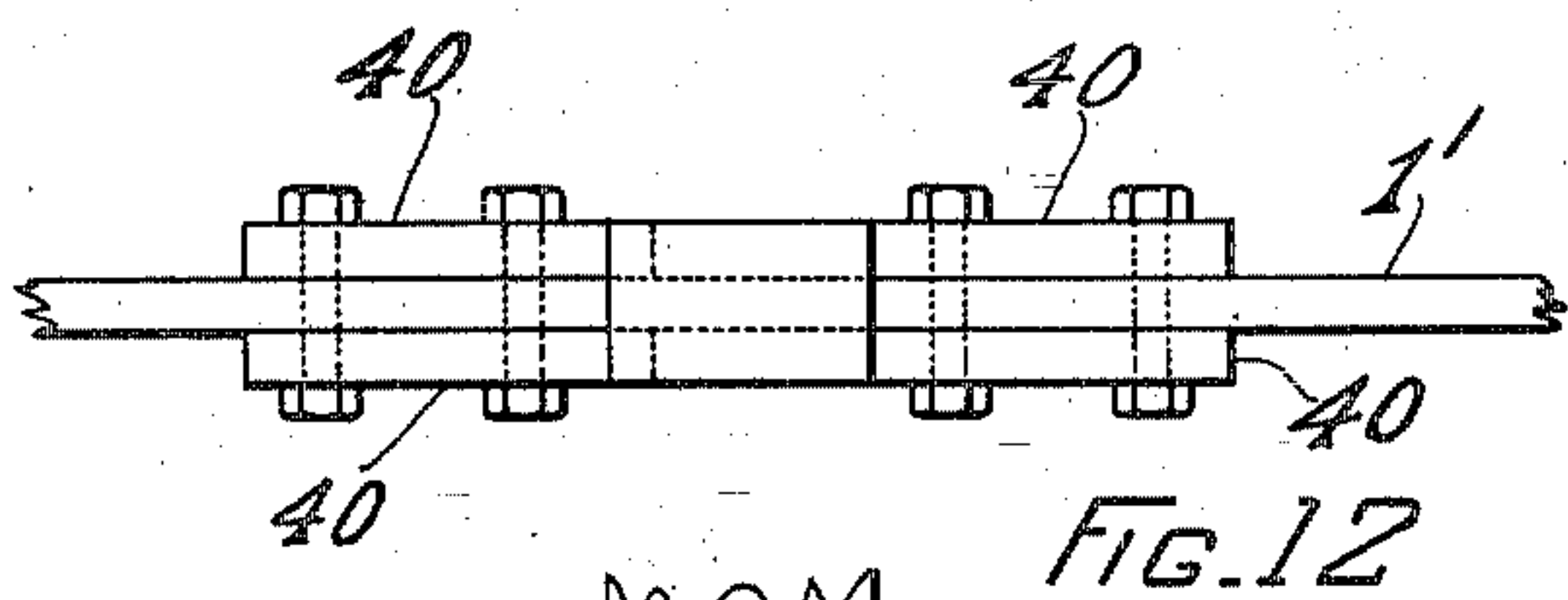


FIG. 12

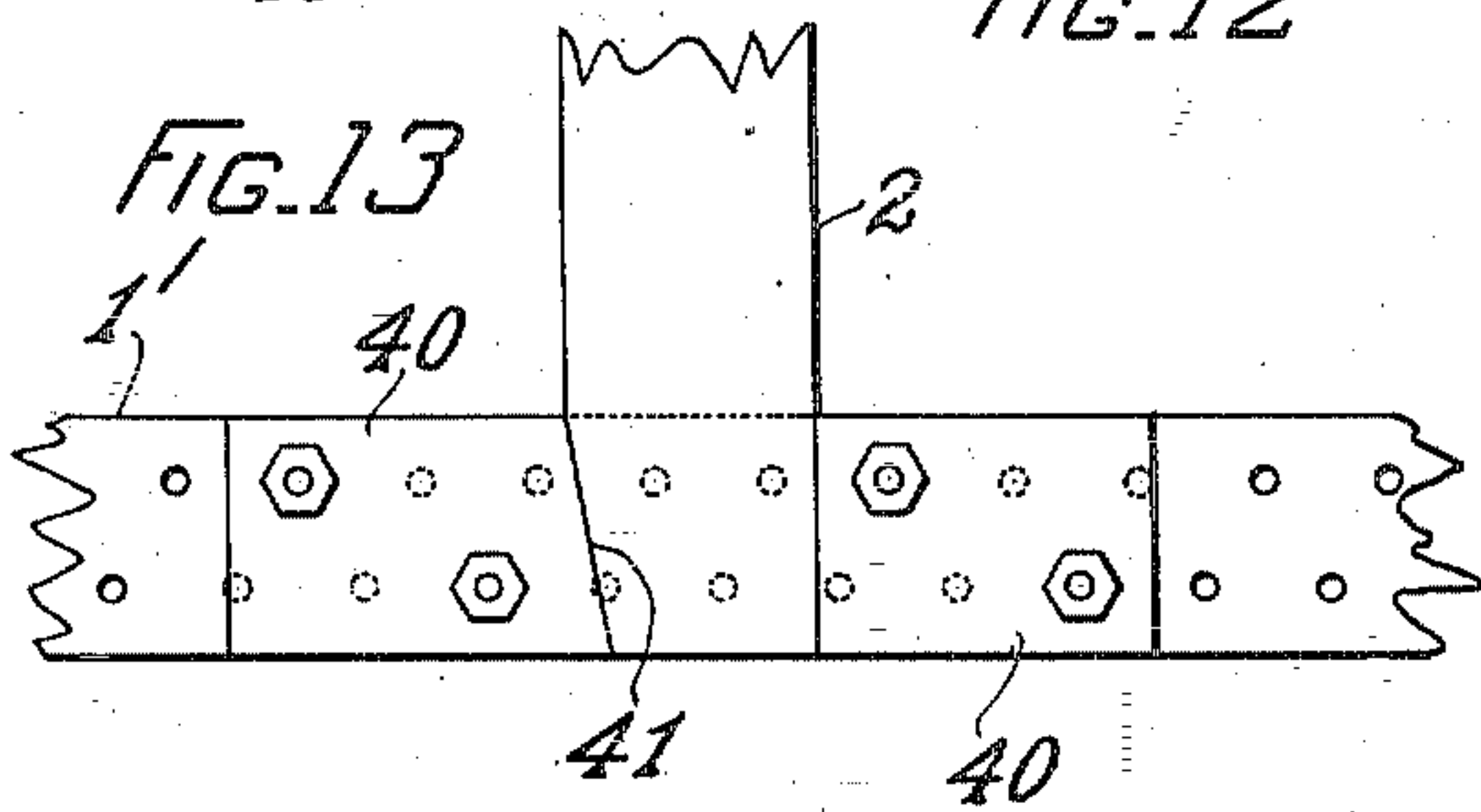


FIG. 13

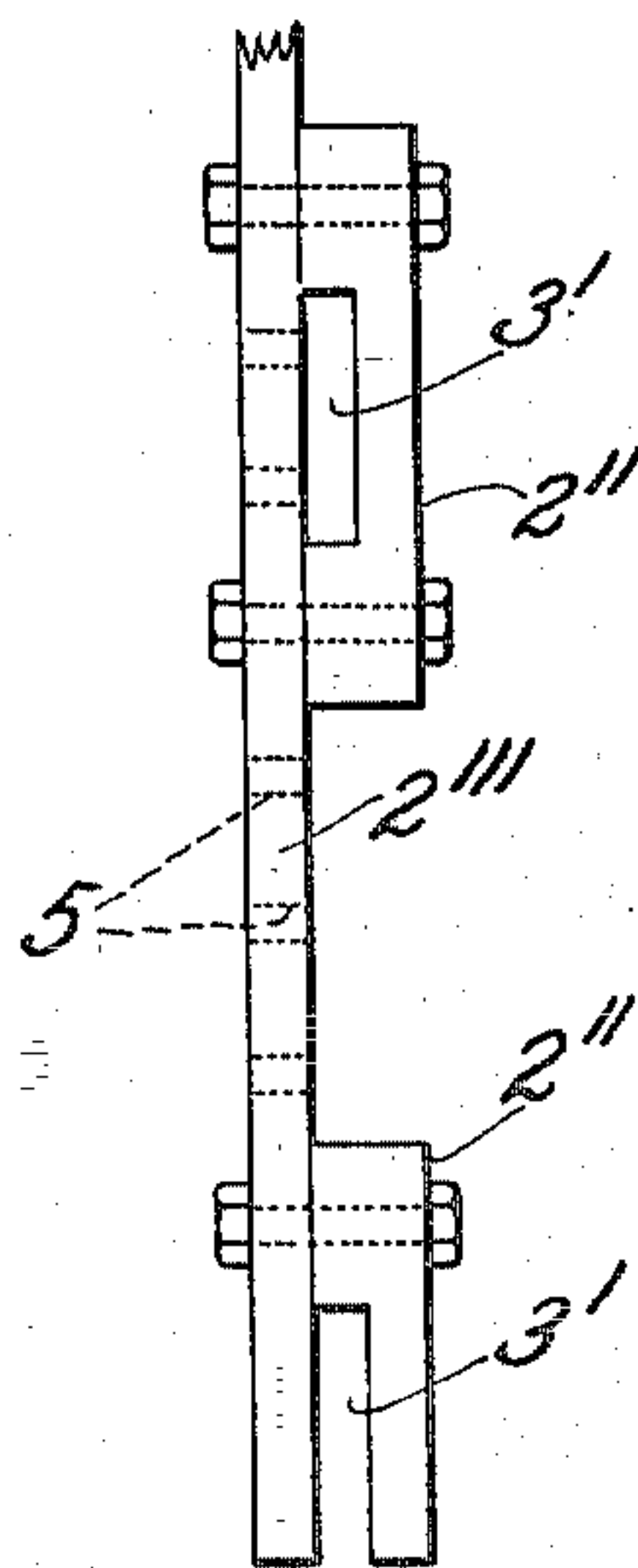


FIG. 11.

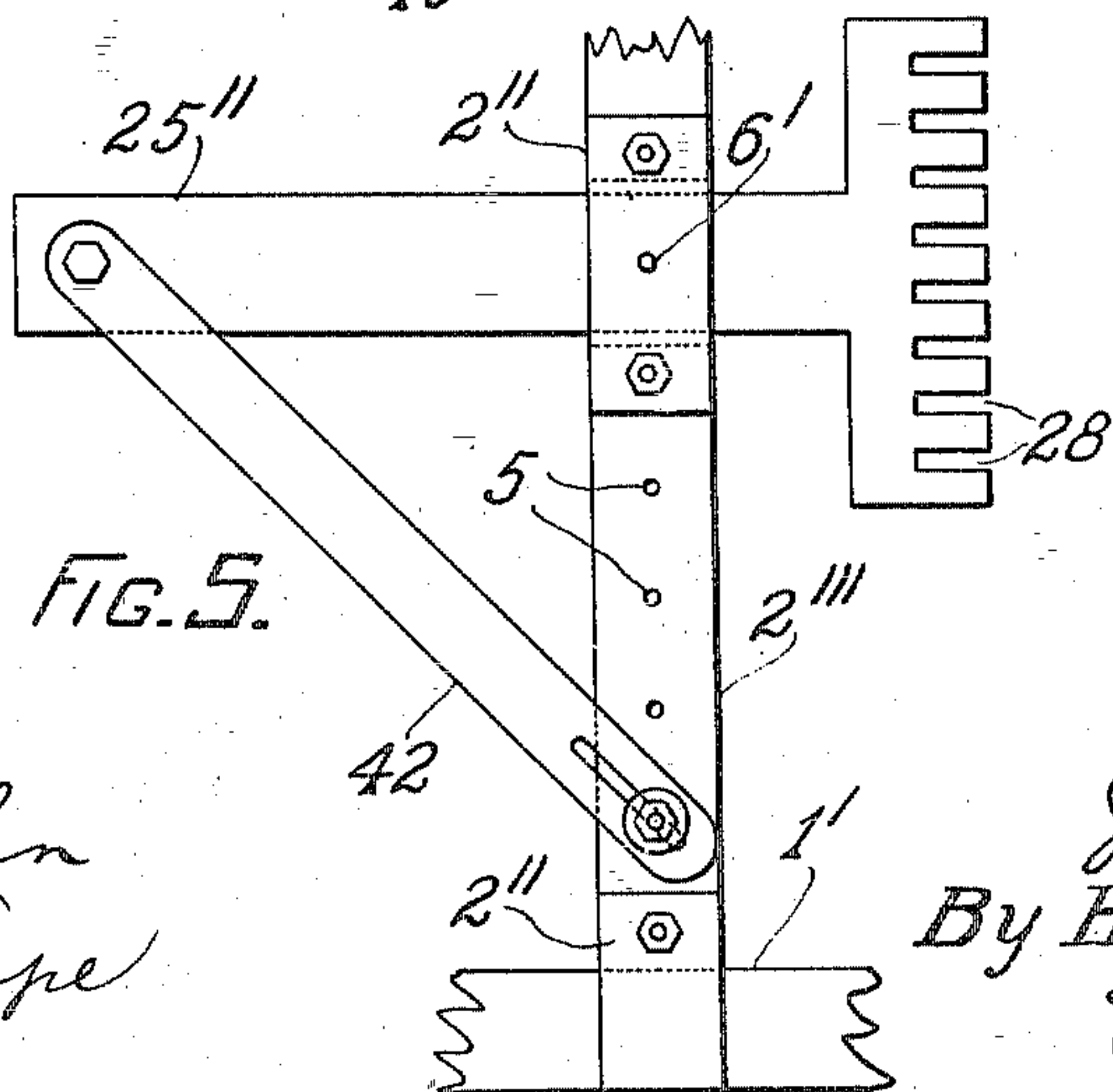


FIG. 5.

Witnesses  
 E. Allen  
 M. B. Hope

Inventor  
 James Daisley  
 By His Attorney  
 Everett & Kent

J. DAISLEY.  
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3 SHEETS—SHEET 3.

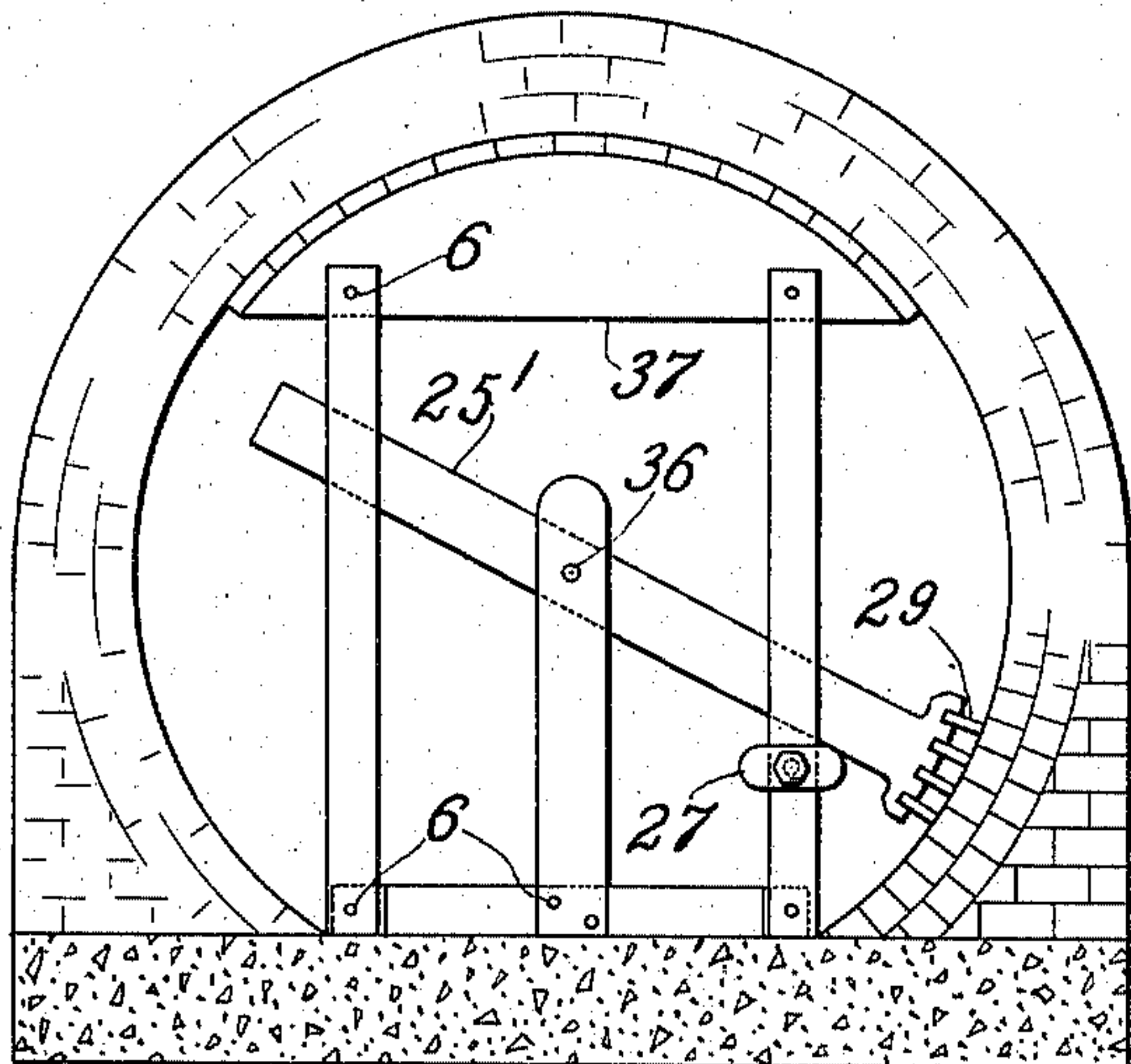


FIG. 6

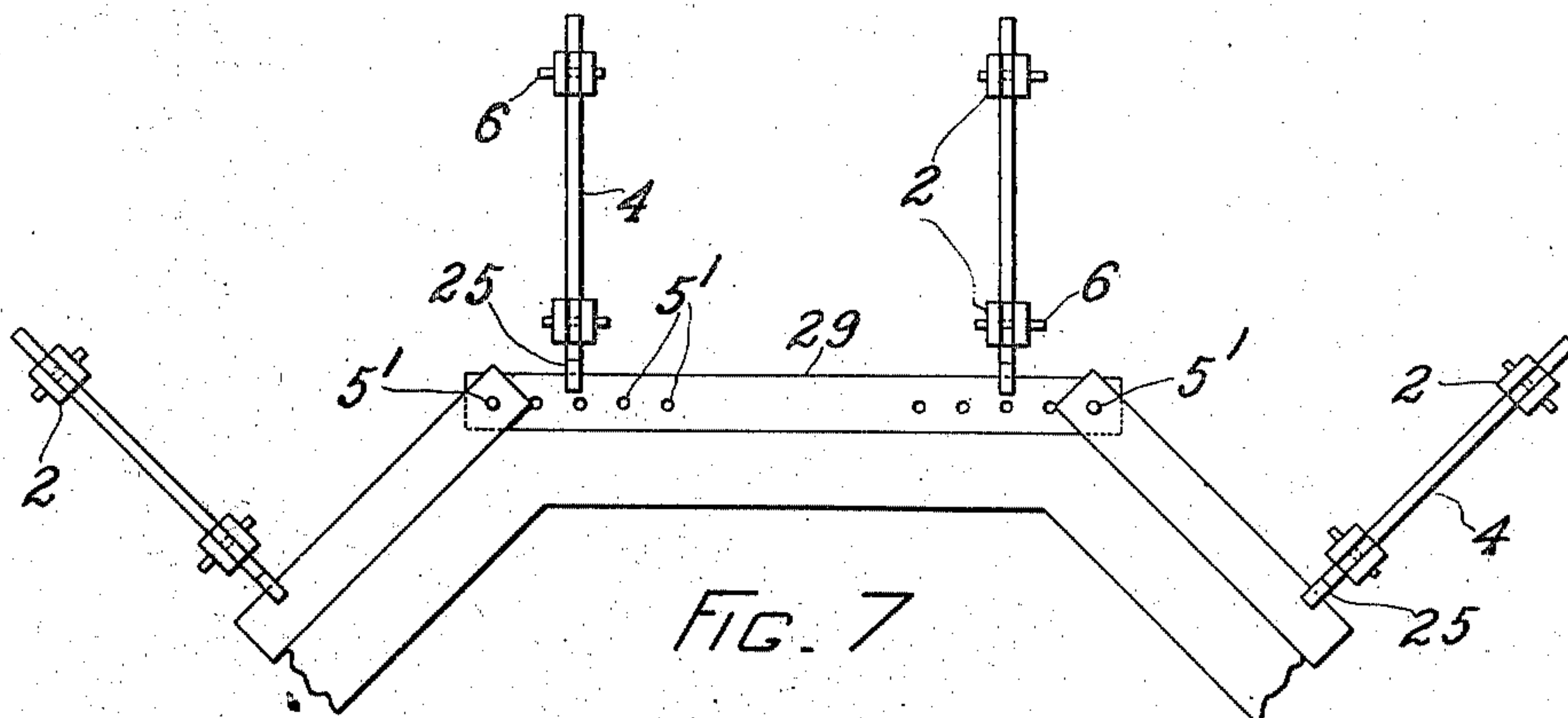


FIG. 7

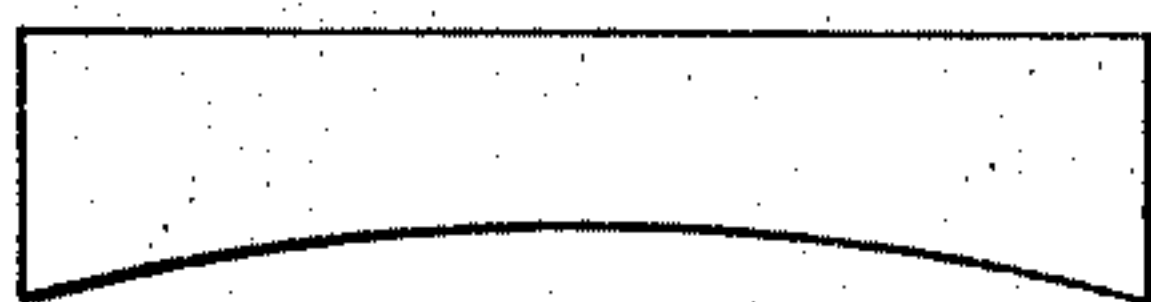


FIG. 9

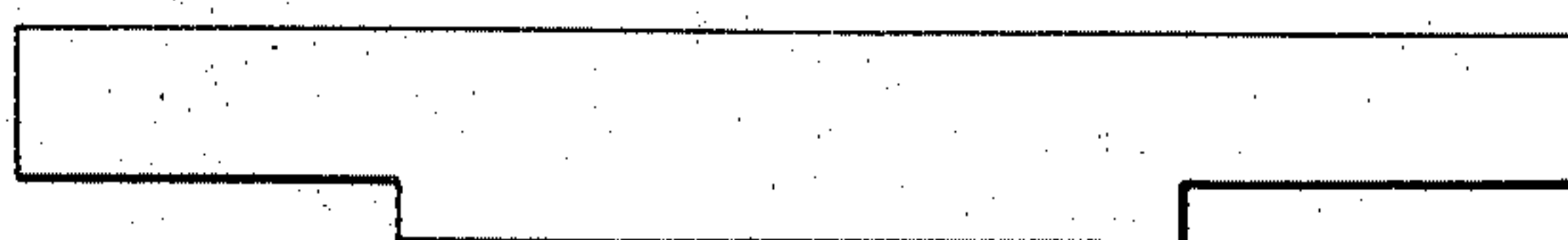


FIG. 8

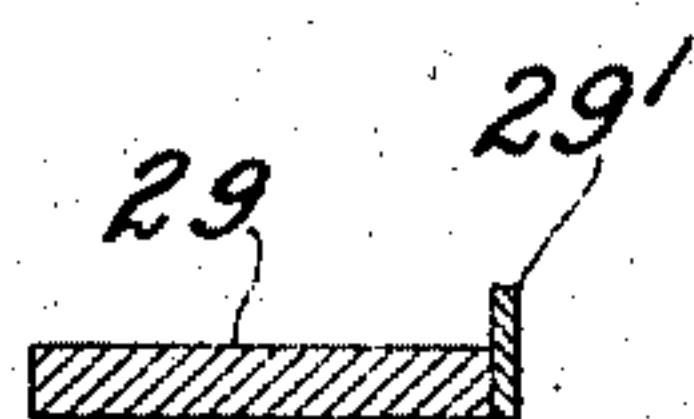


FIG. 10

Witnesses  
 L. Allen  
 M. B. Hope

Inventor  
 James Daisley  
 By His Attorney  
 Everett Kent



# UNITED STATES PATENT OFFICE.

JAMES DAISLEY, OF SOUTH FRAMINGHAM, MASSACHUSETTS.

## BUILDER'S APPARATUS.

966,801.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed October 23, 1907. Serial No. 398,765.

*To all whom it may concern:*

Be it known that I, JAMES DAISLEY, of South Framingham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Builder's Apparatus, of which the following is a specification.

This invention relates to builders' apparatus.

More particularly it relates to a framework and related parts which may be used in the process of building a wall. It is here illustrated and described more particularly as it may be applied for laying brick or other masonry, but its use is not limited to that.

The invention relates in general to the structure of a framework or staging and in one aspect it comprises an adjustable barrier against which the masonry may be laid laterally. In this aspect the invention is applicable either to an ordinary wall or one having projections or recesses in its face and also to a wall having a plane surface or one curved or having angles according to any desired plan; and the apparatus may also be used for over-head work as in a vaulted conduit or an arched entrance or window of a building.

The invention embodies means for quickly and conveniently erecting and removing the apparatus; for adjusting it; and for holding it firm at any elevation above the ground, and embodies other features more particularly hereinafter described.

This case is related in subject matter to my pending application for patent, Serial No. 437,929, which embodies some features originally disclosed herein.

The invention is illustrated in the accompanying drawings in which:

Figure 1 represents the invention in use as a brick laying machine, in perspective; Fig. 2 represents a method of tying the apparatus to a building, thus supporting it erect; Fig. 3 represents in side elevation a detail of Fig. 2 which there appears in end elevation; Fig. 4 represents a detail of Fig. 1 in elevation, in section. Fig. 5 is a side elevation of a modification of part of the structure shown in Fig. 1. Fig. 6 shows another form of the invention in which it is used for laying a conduit having a curved side wall and an arched top. Fig. 7 shows a modification that may be used in forming an angle in a brick wall. Fig. 8 shows a

modification that may be used in forming a recess in the surface of a wall. Fig. 9 shows a modification for forming a curved wall. Fig. 10 is a cross section of a straight edge showing a modified form. Fig. 11 is a front elevation of a modification of another detail of Fig. 1. Fig. 12 is a plan of a modification of a detail. Fig. 13 is an elevation of the same.

Referring to the drawings, 1 represents a sill from which standards or uprights 2 rise, each provided with a vertical longitudinal slot 3. The cross ties 4 pass through these slots and are fastened by pins 6 which pass through holes 5 in the uprights and cross ties. Braces 7 likewise pinned within the slots, as at 8, support the standards upright. Frequently the ground adjacent to the base of the staging or framework is not level or stands at a different elevation from the bottom. The pivotal connection enables the brace 7 to be fastened upon the ground at whatever elevation and distance is most convenient from the base of the uprights 2. The pivotal connection of tie 4 to uprights 2 enables the uprights to be adjusted slightly to make them plumb; and the bottom of the brace 7 can be moved correspondingly. Additional sections 2' may be added vertically to the upright as represented in the top of Fig. 1, the sections being held together by a single pin as represented and the sections thus added being held upright when the wall has risen to a sufficient height by wire ties 9 which are made fast to the floor within the building, as represented in Fig. 2. These ties may pass between bricks of the wall. A convenient fastening is illustrated in Fig. 3 where a windlass bolt 10 is represented in the upright, pierced by a hole 11, the wire being passed through the hole, leaving a little slack between the bolt and the fastening in the building. The bolt is rotated by means of a wrench, a crank or other suitable means, winding the wire about the bolt, and drawing the upright toward the building as much as necessary. When plumb, the nut on the bolt may be screwed tight, thus holding it. This is a substitute for methods heretofore used in which it is customary to omit a brick in the wall, occasionally, to insert a stick of timber, and also to insert timbers through windows of the structure. By this improved method the wall is built in complete form without omission of bricks; and the windows are unobstructed and in condi-



tion for finishing by workmen while the staging still remains in place. When the staging is taken down the tie wires 9 may be cut close to the wall, the portion of the wire in the wall being left there or being withdrawn at pleasure.

When the apparatus is used for laying brick a cradle, lever or beam 25 is employed, passing through the slots 3 of a pair of uprights and supported in one of them by a fulcrum pin 6' which passes through a slot 26 in the beam, and supported in the other by a clamp 27, which may be of any suitable type. As here represented it consists of a bolt which passes through the slot 3 and clamps two blocks on opposite sides of the upright under the beam. The end of this beam or cradle constitutes a form and has a series of recesses 28, alined vertically and adapted to hold a set of bars 29, as many as desired, arranged like crib work at distances apart corresponding to the thickness of courses of masonry which are to be laid. Preferably, in ordinary work, the face is vertical, the recesses are of uniform depth, and the bars are straight-edges of uniform width. The beam also contains a spirit-level 30 set perpendicular to the line of recesses 29, so that when this level is horizontal the bars 29 stand with their faces plumb over each other. In use, the beam is to be adjusted so that its straight-edges are plumb, and respectively stand opposite where the centers of the several courses of masonry are to be. By raising or lowering the clamp 27, the beam 25 is tilted about its fulcrum pin 6' until the faces of bars 29 are vertically in line. The beam, sliding on clamp 27 and pin 6', may then be projected more or less till the straight-edges occupy the precise location where the face of the wall is to be, and may be there fastened in any desired manner. In Fig. 1 a wedge 31 is employed for this purpose.

The masonry is to be built by laying brick or other blocks against the faces of bars 29. For this purpose much less skill and time is required than in laying brick and sighting to a line as heretofore practiced. A workman of but moderate skill can spread the mortar and put the brick in place with great speed and accuracy, the unyielding face of the straight-edged bar serving as a gage. In order to keep the courses level the bar may have a face flange 29' rising to the precise level where the workman should make the top of a course of brick. This is shown in Fig. 10 but is omitted in Fig. 1 for the sake of clearness. If preferred, each bar 29 of Fig. 1 might be arranged with its top at the desired level of the top of each course of brick. A considerable section of wall may thus be laid rapidly, after which the beam and its attached bars is raised to a higher elevation and adjusted for laying

the next set of courses. The slots 3 are substantially continuous, but are interrupted where uprights 2 and 2' are joined. To build opposite these places upper and lower projections of the beam may be provided as shown in Fig. 1. When a protrusion is to be made on the face of the wall the beam is retracted the necessary distance; for an indentation or recess it is projected the necessary distance; and the building proceeds as rapidly as before. In proper cases, where the length of the desired recessed or projected portion of the wall is less than the length of the straight-edge by which it is to be built, a special bar may be employed having in its face a suitable projecting or recessed portion (Fig. 8). When a curved wall, as a bay-window, is to be built, bars having faces of the desired shape are substituted (Fig. 9). To make an angle in the wall jointed bars may be used as represented in Fig. 7. These two may be arranged at the desired angle, each being suitably supported as above described, and pinned pivotally together through holes 5'.

For building a wall curved in cross section, as a conduit, the beam and straight edges may be adjusted to successive positions as in the ordinary case, the ordinary plumb alinement of the straight-edges being varied suitably to the case in hand, and the beam being projected as needed to put their faces in the desired positions. A simple and effective application of the invention is shown in Fig. 6, where the interior of the conduit is circular. The beam 25' is here mounted upon a fixed pivot 36 located at the axis of the conduit. For laying the successive courses it is only necessary to swing the beam to successive positions about this pivot, it being held by a clamp 27 or otherwise. The top of the conduit may be formed on an arched frame 37 resting on the tops of the uprights or pinned thereto as in Fig. 6.

The Figs. 5, 11, 12, and 13 represent modifications of the form shown in Fig. 1, in which a lighter and more readily portable frame is employed. In Figs. 12 and 13 a thin sill 1' is represented, which is thickened to form a neck for holding the uprights 2 at each end by blocks 40 bolted on opposite sides, the end of the upright being positioned between them. These are adjustable to various holes, thus changing the length of the sill, and the opposed faces of these blocks may be beveled as at 41 so that the upright when lifted in the act of removing it will not stick.

Fig. 11 shows a method of reducing the weight of the uprights, in which instead of the uprights being double throughout, the vertical slot 3' is formed by a movable block 2'' which by adjustment to whatever position is desired on the upright gives an ef-



fect practically similar to that of a continuous slot in a double upright. The forked base of the upright is made likewise.

Fig. 5 represents in side elevation an application of the form shown in Fig. 11 and in addition it shows a means of dispensing with the second row of upright standards, the entire beam or cradle 25'' being supported upon one standard 2''. The beam is adjustable about a pivot 6' as before, by adjusting the supporting brace 42. This can be used for low elevations and light work.

I claim:

1. Apparatus of the class described, comprising a framework having timber uprights, each being slotted vertically, the slot being edgewise toward the work; and there being horizontal pin holes through each upright throughout substantially the entire height of the upright; in combination with pins in said holes; horizontal beams projecting from said slots and supported on said pins, being thereby adjustable to varying heights on said uprights; and forms sustained by the beams, having faces toward the structure which is being built, said faces extending vertically and having means to sustain bars running horizontally at the desired face of said structure.

2. Apparatus of the class described comprising uprights and cross pieces joined by pins; there being vertical slots in the uprights; and a facing for work extending up and down and extending between the uprights along the desired positions of the face of the work; and beams supporting said facing and fitting into said slots and supported by said uprights.

3. Apparatus of the class described, including an upright and means to steady it, and a bar extending to each side thereof along the desired positions of the faces of a multiplicity of horizontally adjacent blocks of masonry; said bar being adapted to resist movement of blocks of masonry; and there being means to vary the elevation of the bar, and means to support the bar on said upright.

4. Apparatus of the class described, including an upright and means to steady it, and a set of bars and means to support them thereon, said bars comprising a structure extending to each side thereof and extending up and down therewith along the desired positions of the faces of a multiplicity of adjacent blocks of masonry and adapted to resist movement of blocks of masonry said bars being arranged with their faces in straight alinement with each other up and down; and means to adjust the said structure about a horizontal axis, whereby the angle of said alinement of faces is adjusted with respect to the vertical.

5. Apparatus of the class described, com-

prising a frame work having uprights and a series of bars arranged vertically one over the other, and extending along the desired positions of faces of a multiplicity of horizontally adjacent blocks of masonry and adapted to resist movement of blocks of masonry; said series of bars comprising separate horizontal bars, one at the level of each course of masonry with its face narrower vertically than the course of masonry, whereby openings between bars are provided, and there being means whereby said uprights support said bars.

6. Apparatus of the class described comprising a frame work having uprights and a series of bars and means to support them thereon, said bars adapted to resist movement of blocks of masonry; said series of bars comprising a crib-work structure provided with a multiplicity of openings and extending horizontally and vertically along the desired positions of the faces of a multiplicity of adjacent blocks of masonry.

7. Apparatus of the class described, comprising a beam mounted pivotally about a horizontal axis; means to support the beam at various elevations; a facing for work supported by the beam, adapted to abut the desired positions of faces of a multiplicity of courses of masonry and to resist movement of blocks of masonry; said facing having barrier points arranged in straight alinement up and down; and said beam having a surface perpendicular to said alinement of facing and adapted to be engaged by a spirit level; whereby the plumb of said alinement may be tested by a spirit level applied to said surface; and there being means to fix the beam in whatever angular position on its said axis corresponds to a plumb alinement.

8. Apparatus of the class described, comprising a frame work having uprights, in combination with a beam supported thereby and adapted to turn upon a horizontal axis transverse to the beam, the tail portion of the beam moving close to an upright, a block and means to clamp it on that upright at various elevations with respect to the axis, said block being arranged to engage the beam and obstruct its movement about its pivot; and there being a facing for work supported by the beam.

9. Apparatus of the class described, including an upright and means to steady it, and a bar extending to each side thereof along the desired positions of the faces of a multiplicity of horizontally adjacent blocks of masonry; there being a beam projecting from the upright and supporting said bar and movable to varying elevation on said upright.

10. Apparatus of the class described, including an upright and means to steady it, and a set of bars and means to support them



thereon; said bars comprising a structure extending to each side thereof and extending up and down therewith along the desired positions of the faces of a multiplicity of adjacent blocks of masonry and adapted to resist movement of blocks of masonry, said bars being arranged with their faces in straight alinement with each other up and down; a beam supported by and projecting from said upright and supporting said bars; and means to adjust said beam about a horizontal axis parallel to the plane of alinement of said faces of bars.

11. Apparatus of the class described, comprising a frame work having timber uprights each slotted vertically substantially throughout its entire height; in combination with cross beams mounted within the slots; a facing held thereby, adapted to occupy the desired location of face of further construction; there being upward and downward projections of the beam at its face-holding end adapted to overlap the parts of the uprights above and below the elevation of said beam.

12. Apparatus of the class described, comprising a frame work having a double row of uprights, in combination with a beam supported pivotally about a horizontal axis on one upright and an element adapted to be supported at various elevations on an adjacent upright of the other row and to engage said beam at a distance from its said axis, thereby sustaining the beam at various an-

gles about its said axis; there being facing supported by the beam adapted to form a barrier at the desired location of construction of the work.

13. Apparatus of the class described comprising a framework having uprights in combination with a beam and a facing for work supported by the beam, said facing comprising a series of bars set over each other and extending horizontally to each side of the beam, the beam being supported on the framework by a horizontal pin and slot connection, whereby its angle to the frame work and its degree of projection therefrom may be adjusted by relative movement of the pin in the slot.

14. Apparatus of the class described comprising a frame work having uprights and a barrier supported thereon adapted to resist lateral movements of pieces of masonry, said barrier comprising one or more horizontal bars adapted to extend along the desired positions of the faces of adjacent courses of masonry, each bar having a flange extending its face upward, and means to set the said bars with edges of said flanges at the levels of the tops of the positions of the courses.

In testimony whereof I hereto affix my signature, in presence of two witnesses.

JAMES DAISLEY.

Witnesses:

EVERETT E. KENT,  
MINNA B. HOPE.