

958,419.

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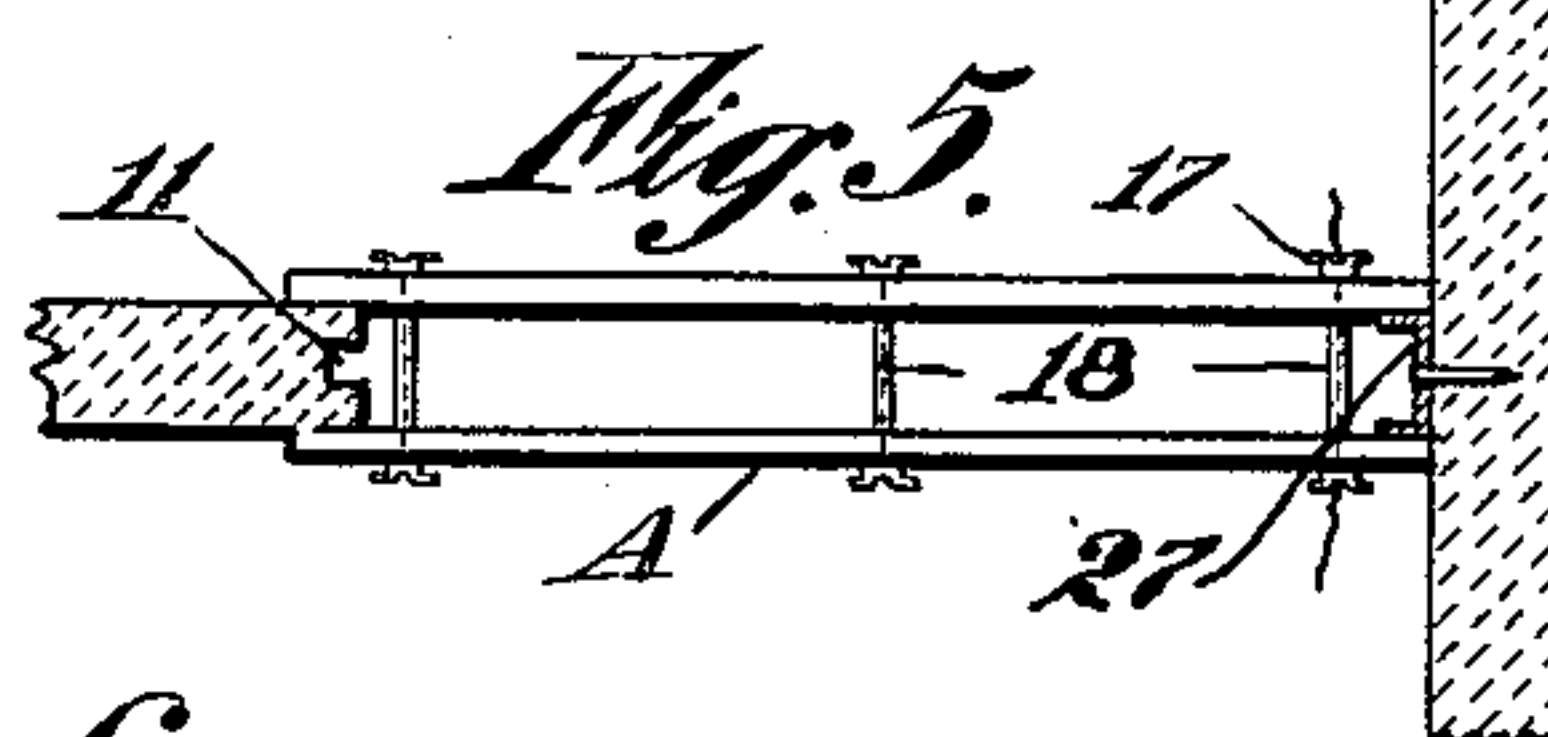
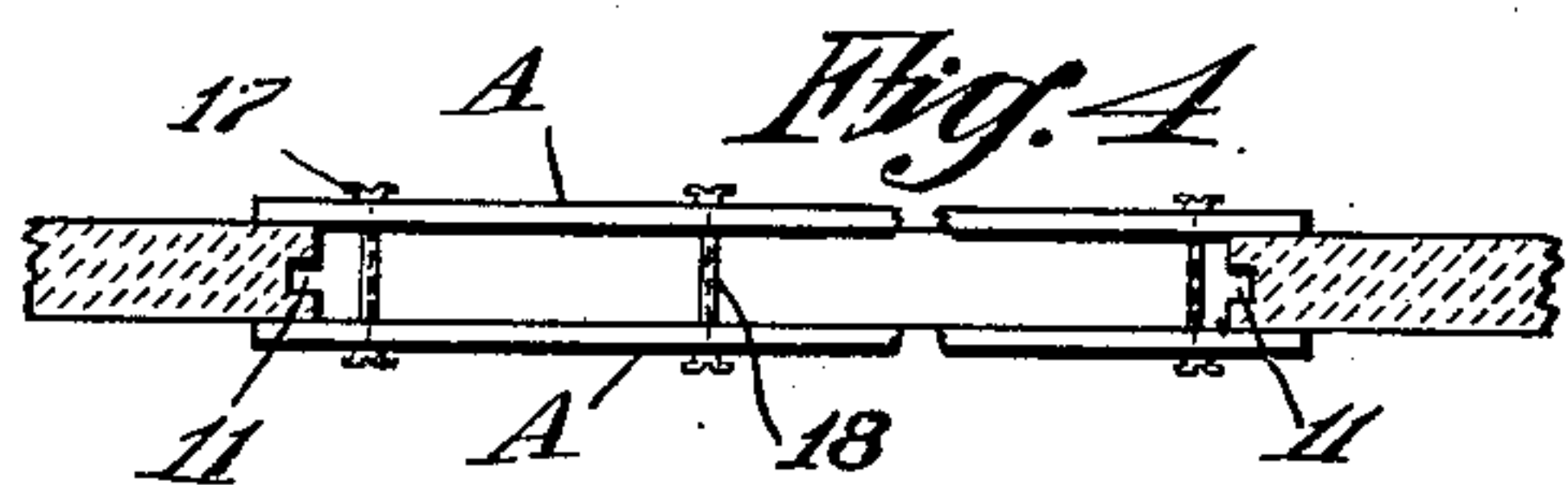
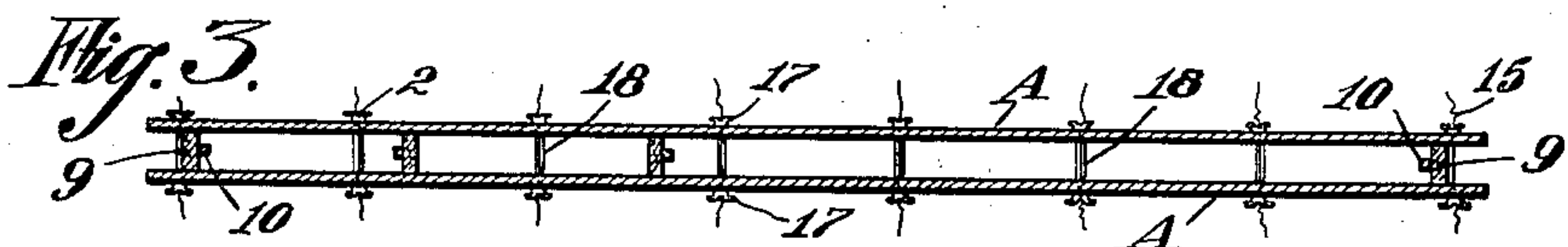
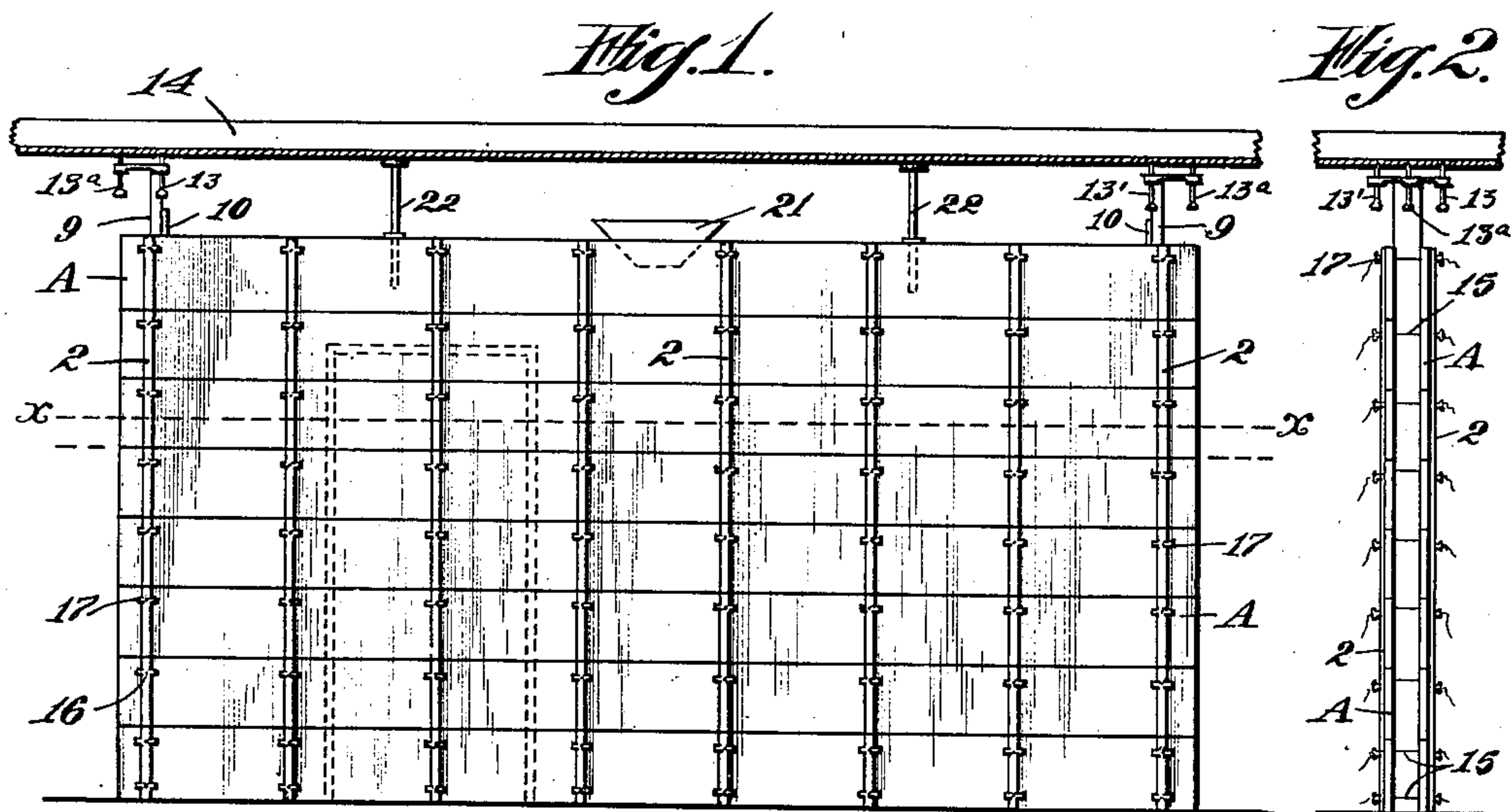
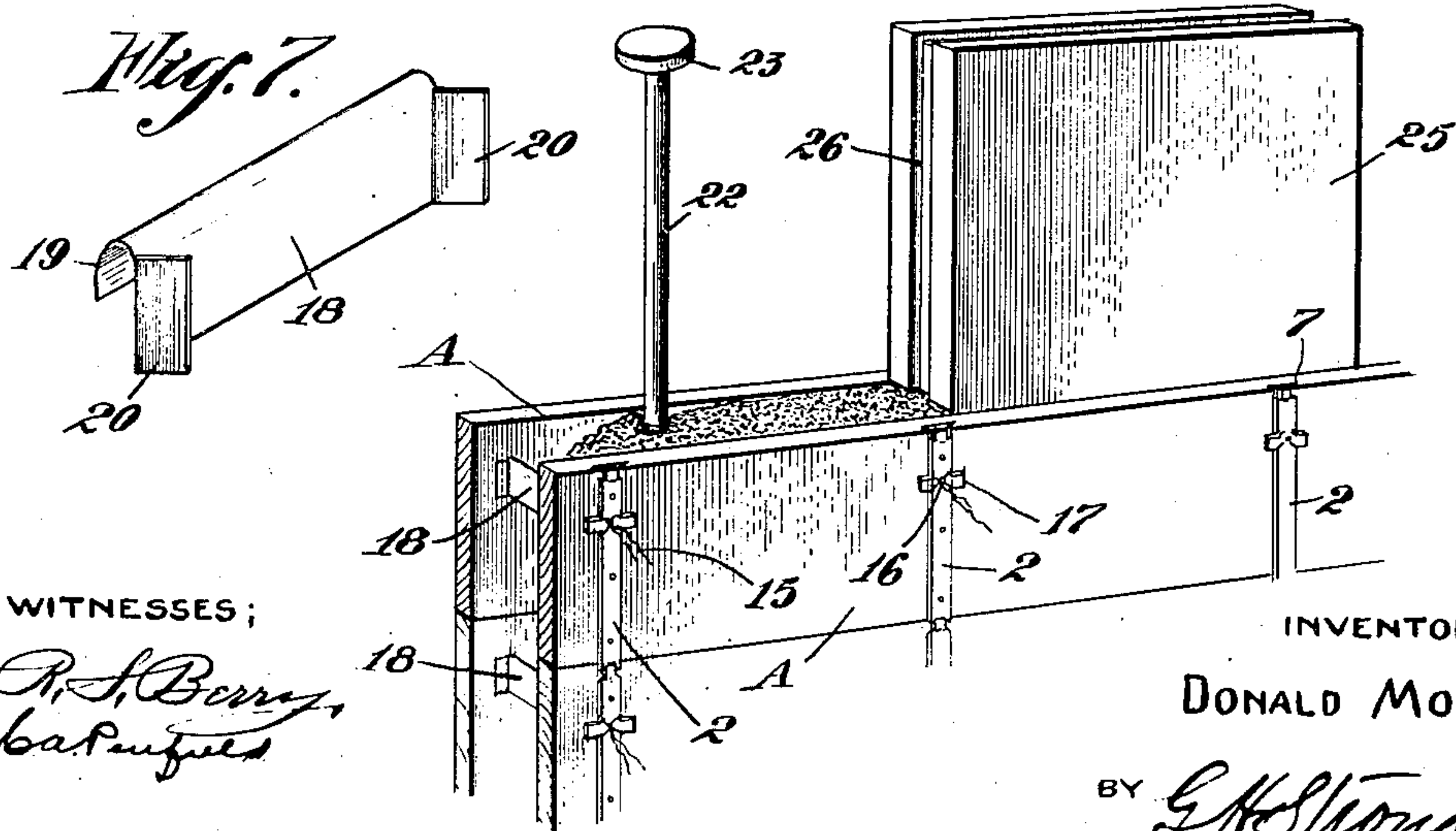


Fig. 6.



WITNESSES;

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MANUFACTURE OF FIREPROOF PARTITIONS.
APPLICATION FILED OCT. 6, 1909.

958,419.

Patented May 17, 1910.

2 SHEETS—SHEET 2.

Fig. 8.

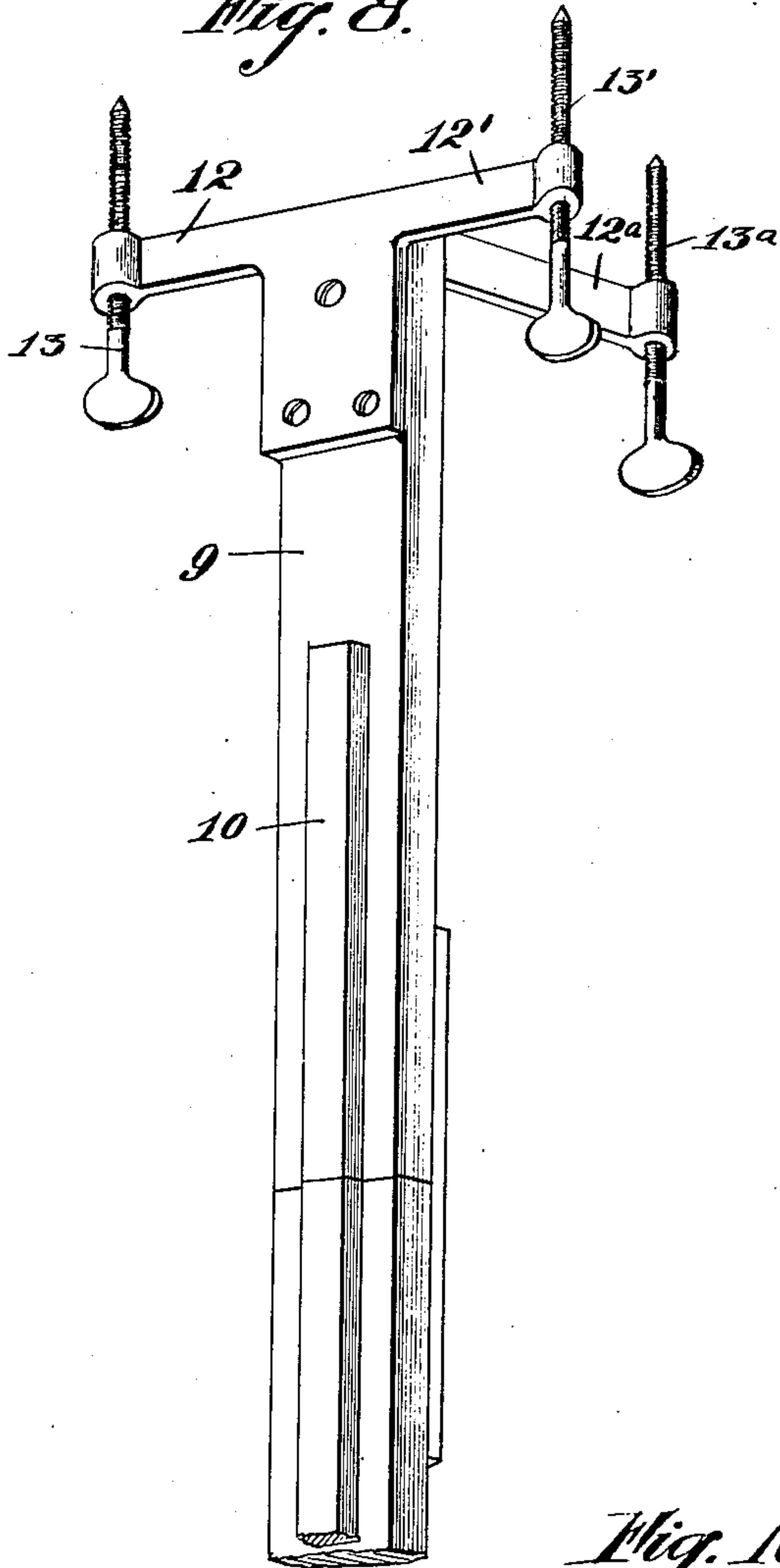


Fig. 9.

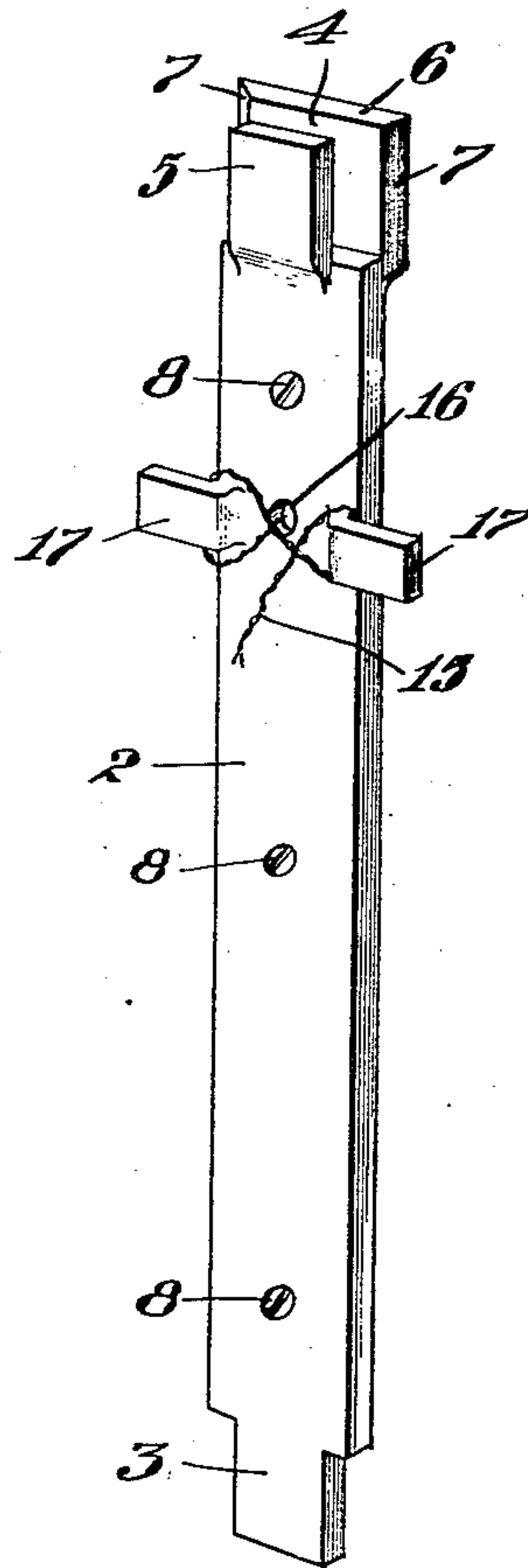


Fig. 10.

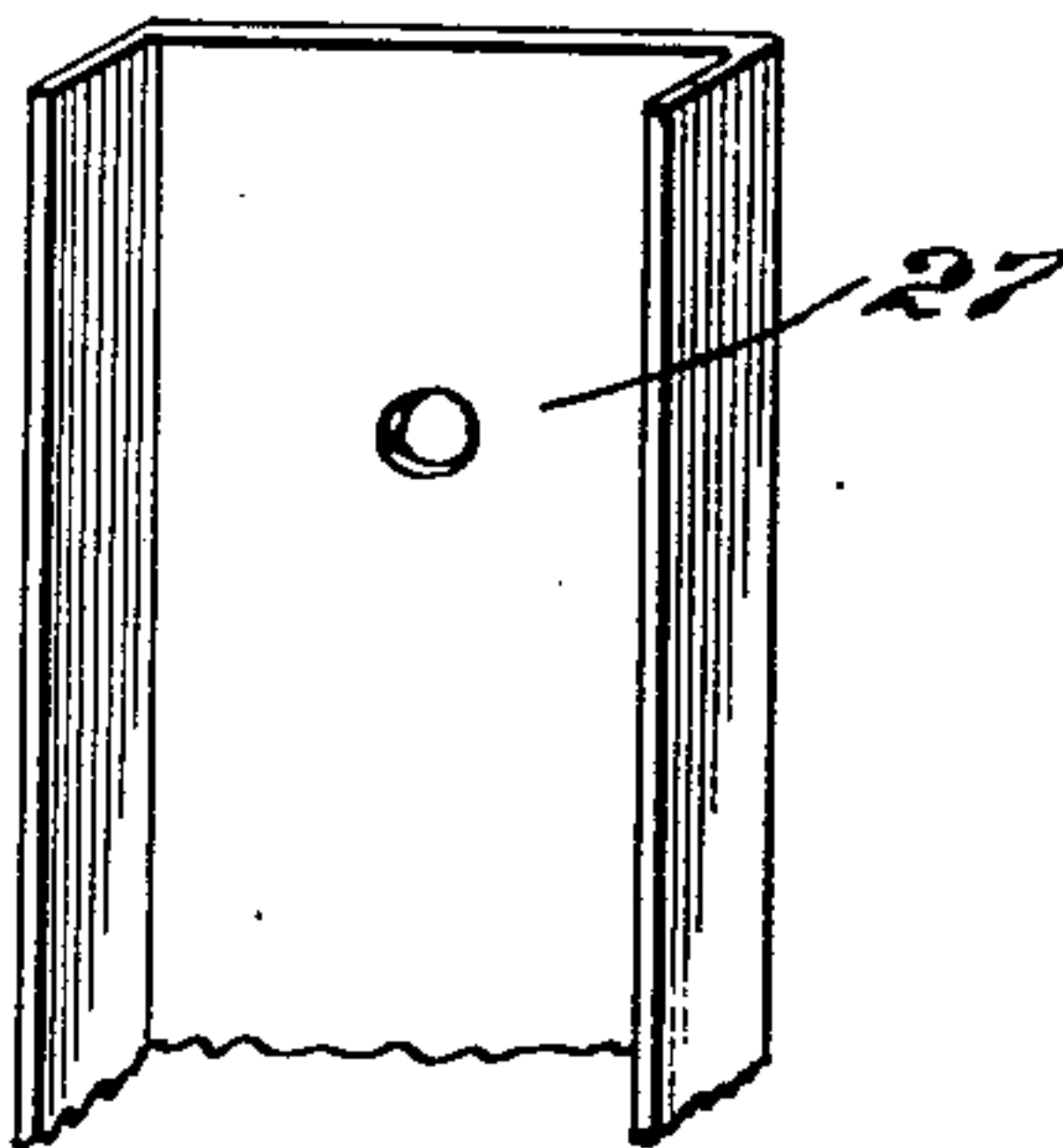
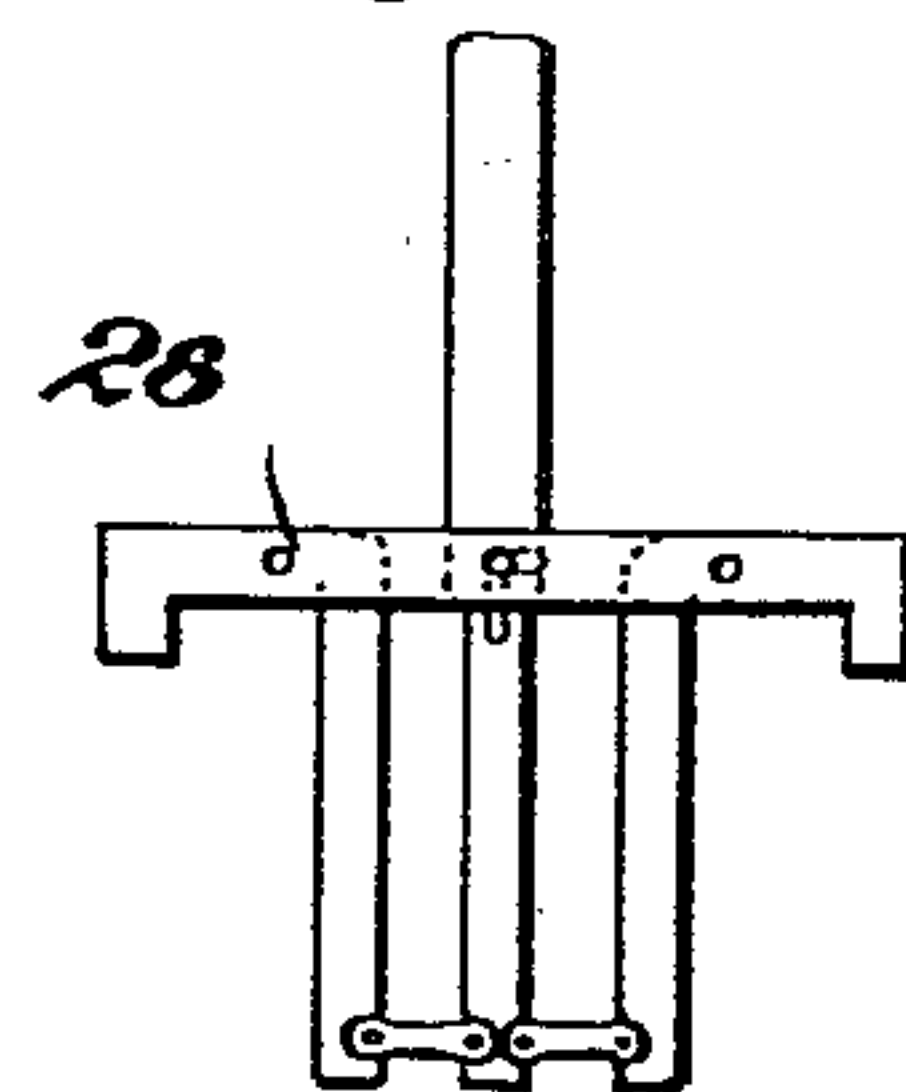


Fig. 11.



WITNESSES

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UNITED STATES PATENT OFFICE.

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MANUFACTURE OF FIREPROOF PARTITIONS.

958,419.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed October 6, 1909. Serial No. 521,395.

To all whom it may concern:

Be it known that I, DONALD MOWAT, citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in the Manufacture of Fireproof Partitions, of which the following is a specification.

This invention relates to the construction of partition walls in fireproof buildings, and pertains particularly to forms for use in molding partition walls of plastic materials.

It is the object of this invention to provide means by which partition walls can be molded or cast in place, so as to form practically a monolithic wall of cement or other plastic materials without the use of studding, lath or other reinforcements.

A further object is to provide a form for constructing partition walls that can be quickly and readily assembled and distributed, and which can be easily and accurately plumbed and set to a line. These forms are so designed and constructed that they can be set up, the partition walls cast, and the forms removed without requiring skilled labor, then by the use of a plastic mixture, consisting of hard wall plaster and sand, in approximately the proportions of one part plaster to three parts sand, a very cheap and substantial partition wall is produced.

Any desired plastic mixture may be used, such as ordinary concrete, cement and the like, but the above mentioned preparation is particularly advantageous, as it sets quickly and permits of the removal of the forms within a few hours after casting, thus enabling very rapid construction.

By the use of this invention partition walls can be built truer, smoother and of more even surface than is ordinarily the case where lath and plaster are used.

The invention consists of the parts and the combination and construction of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the invention. Fig. 2 is an end view. Fig. 3 is a horizontal section on the line X—X, Fig. 1. Fig. 4 is a plan section showing the application of the forms in the construction of long partitions. Fig. 5 is a similar view showing how a partition wall is constructed and connected with a cross wall. Fig. 6 is

a detail in perspective showing how the partition is finished at the ceiling line. Fig. 7 is a view of a separator. Fig. 8 is a detail in perspective of the adjustable end stud. Fig. 9 is a view of a slat. Fig. 10 shows the channel used at the joining of cross walls. Fig. 11 is a view of a gage.

In the drawings A represents the side members or panels of the forms, and these panels are of suitable size, shape and material. Preferably they are of wood coated with preservative materials, but in some instances sheet metal plates may be employed. The panels are usually of a length equal to the section of wall or partition to be cast, and each panel is provided at intervals on its outside about a foot apart with transverse slats 2, each of which has a projecting tongue 3 on one end and is forked at the other to provide a slot 4, Fig. 9; the slot 4 is approximately in the plane of the slat and the slot of one slat is adapted to receive the projecting tongue 3 on the end of an adjoining slot on another panel. The slot 4 is formed by the flanges 5 and 6 on the outer and inner faces of the slat 2. The inner flange 6 is beveled on its vertical edges, as at 7, so that when a slat is secured to a panel A the flange 6 will be dovetailed into a corresponding mortise on the top edge thereof, Fig. 6, thus giving a rigid and secure connection. As a further means of attaching the slats to the panels A, screws 8 are employed in the usual manner. Each slat 2 is perforated at 16 and has the oppositely extending outwardly offset projections or lugs 17 on each side of a hole 16 to form a cleat for securing a tie wire 15 by which the panels are kept from spreading; all as will be shortly described. The end panels 9 of the form are constructed of rectangular studs, of a width equal to the required thickness of the partition. A rectangular strip 10 is secured to the inner face of each stud or end panel 9 so as to form a groove or channel 11, Figs. 4-5, in each end of a cast section. The upper end of each stud 9 is fitted with an adjustable clamp consisting of cross arms 12, 12', 12^a, preferably three in number, Fig. 8, one of which, 12^a, extends centrally and rearwardly of the stud 9, and in the plane of the mold or partition, the other two, 12, 12' projecting at right angles thereto. Wing bolts 13, 13', 13^a are threaded in the outer ends of the respective arms 12, 12', 12^a and are sharply pointed

at their upper ends so as to "bite" when bearing against a surface, as the ceiling or an overhead beam.

The operation is as follows: To construct
 5 a monolithic partition extending between a floor and a ceiling, by means of this invention, a line is first drawn upon the floor or ceiling, or both, along which the partition is to be erected. The upright studs 9 are
 10 then placed in position, as shown in Fig. 1, and the rear bolts 13^a screwed into the ceiling 14 so as to hold the studs. The bolt 13^a acts as a pivot around which the upper end of the stud may swing so as to adjust it
 15 perpendicularly and in true alinement, whereupon the remaining bolts 13—13' are screwed tightly against the ceiling, thus retaining the stud in an upright rigid position. The bottom side panels A are then placed
 20 on both sides of the studs 9, as shown in Fig. 2. A wire 15 is then passed through a hole 16 in each of the slats 2 and through the mold to bind the opposed spaced panels A together, as shown in Figs. 3, 2, 6; the
 25 ends of the wire being securely held by winding it around the cleats 17. Separators 18 are placed astride of the wires 15 between the panels A, so as to govern the width of the space between the sides. The
 30 separators being of a length equal to the width of the studs 9 insures the completed partition being of equal thickness throughout. The slats on the lowermost course of side panels are provided with additional
 35 holes 16 and cleats 17 so that additional cross tie wires can be used to avert the spreading of the lower panel by the weight of the plastic mixtures. After the lowermost course of panels are secured in place,
 40 the upper ties are set thereon, with the lower ends 3 of the slats 2 engaging the slots 4 of the slats beneath. The sides are tied together through each slat, as before described, separators 18 being placed over the
 45 wire ties 15 at suitable intervals. The separators 18 are constructed with a hook 19 to catch over the wires 15, and have end flanges 20 which bear against the insides of the panels A. A set of tie wires 15 are
 50 passed through the end slats outside of the studs 9 so that the latter will not be pressed outward by the materials in the form. The mold is thus built up to within fifteen or eighteen inches, more or less, of the ceiling
 55 when the plastic material of which the partition is to be built is poured in at the top in a suitable manner, as through a hopper 21.

In order to support the cast partition section after the mold is removed, there are
 60 inserted into the top of the mold and into the fresh plaster certain braces 22, which have flat projecting heads 23 to bear against the ceiling. When plaster sets and the forms
 65 are removed the partition will be rigidly

held against any sidewise or tipping movement. In order to take down the mold the wires 15 are cut and afterward withdrawn or trimmed even with the walls of the cast partition, or they may serve as bonds for
 70 wall finishing slabs of marble, etc. The space between the top of the partition wall and the ceiling may be filled with blocks 25, or in any other suitable manner. The blocks 25 are provided with grooves or channels
 75 26 on their outer edges which form a tie when filled with cement, thus binding the partition wall to the blocks 25 and ceiling 14. Where one of these cast partitions is to be connected to a wall or cross partition,
 80 I employ channels 27, preferably constructed of sheet metal which are secured to outside walls or cross partitions into which channels the cast partition is molded by tying the panels A of the form against the
 85 outside of the channel, as shown in Fig. 5, the upright stud being dispensed with in this case.

Ordinarily, in the construction of long partitions a number of sections are cast on
 90 a line and allowed to harden, with spaces or intervals between their ends as shown in Fig. 4. The sides A of the form are then tied across the intervening space, as shown, the studs 9 being omitted. The materials are
 95 then poured in the usual manner, and flowing into the grooves 11 form a substantially monolithic wall.

Door and window frames may be set in position inside the form as shown by dotted
 100 lines in Fig. 1, and the materials poured around them, thus embedding the frames within the wall.

A gage 28, such as shown in Fig. 11, may be employed in conjunction with or in lieu
 105 of the separators 18 as a means of governing the width of the space between the side panels A.

Having thus described my invention, what I claim and desire to secure by Letters Pat-
 110 ent is—

1. A mold for manufacturing partition structures, said mold comprising a series of side panel members and means for locking
 115 them together to form two side walls of a mold, said locking means including crosswise extending slats, each formed with a tongue at one end and a slot at the other, the said slot being formed between two spaced members, the inner one of which is off-set
 120 beyond the inner side of the slat and is adapted to fit a slot formed in the edge of the panel, bonding wires passed through the opposed panels, and spacing members supported by said bonding wires and having
 125 end portions parallel with and bearing against the inner sides of the panels.

2. A mold for manufacturing partition structures, said mold comprising a series of side panel members and means for locking
 130

them together to form two side walls of a mold, said locking means including crosswise extending slats each formed with a tongue, the said slot being formed between two spaced members, the inner one of which is of dove-tail form in cross section and is off-set from the inner side of the slat and is adapted to fit a corresponding slot in the edge of the panel, bonding wires passed through the opposed panels, and spacing members supported by the bonding wires.

3. A mold for manufacturing partition structure, said mold comprising a series of side panel members and means for locking them together to form two side walls of a mold, said locking means including crosswise extending slats each formed with a tongue at one end and a slot at the other, the said slot being formed between two spaced members, the inner one of which is of dove-tail form in cross-section and is off-set from the inner side of the slat and is adapted to fit a corresponding slot in the edge of the panel, bonding wires passed through the opposed panels, and spacing members supported by the bonding wires, said spacing members having hook-shaped flanges along one edge adapted to hook over the bonding wires, and said slats having off-set cleats on their outer sides to which the wires are secured.

4. A mold for partition structures consisting of a series of panel members adapted to be assembled together to inclose a mold

space, each of said panel members having crosswise extending slats, each slat formed with a tongue at one end and a slot at the other, the slotted portion of the slat being formed by a pair of flanges, with one of the flanges bent inwardly and having a vertical portion with dovetailed edges to fit a corresponding dovetailed slot in the edge of the panel, and said slot lying approximately in the plane of said slat.

5. A mold for partition structures comprising side panels and end panels, means for locking the parts together, and clamping means on the end panels adapted to engage the ceiling, said clamping means including horizontally extending arms and adjusting screws passing through said arms and engaging the ceiling at a plurality of points.

6. A mold for partition structures comprising side panels and end panel members, means for locking the parts together, and the end panels having clamping means to engage the ceiling, said clamping members comprising crossed arms on each end panel, and said arms having adjusting screws off-set from their supporting panel member.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DONALD MOWAT.

Witnesses:

CHARLES A. PENFIELD,
E. G. BLASDEL.