

G. H. SHERWOOD.

SECTIONAL FORM AND TRUSS SUPPORT.

APPLICATION FILED JUNE 29, 1906.

949,093.

Patented Feb. 15, 1910.

3 SHEETS—SHEET 1.

Fig. 2.

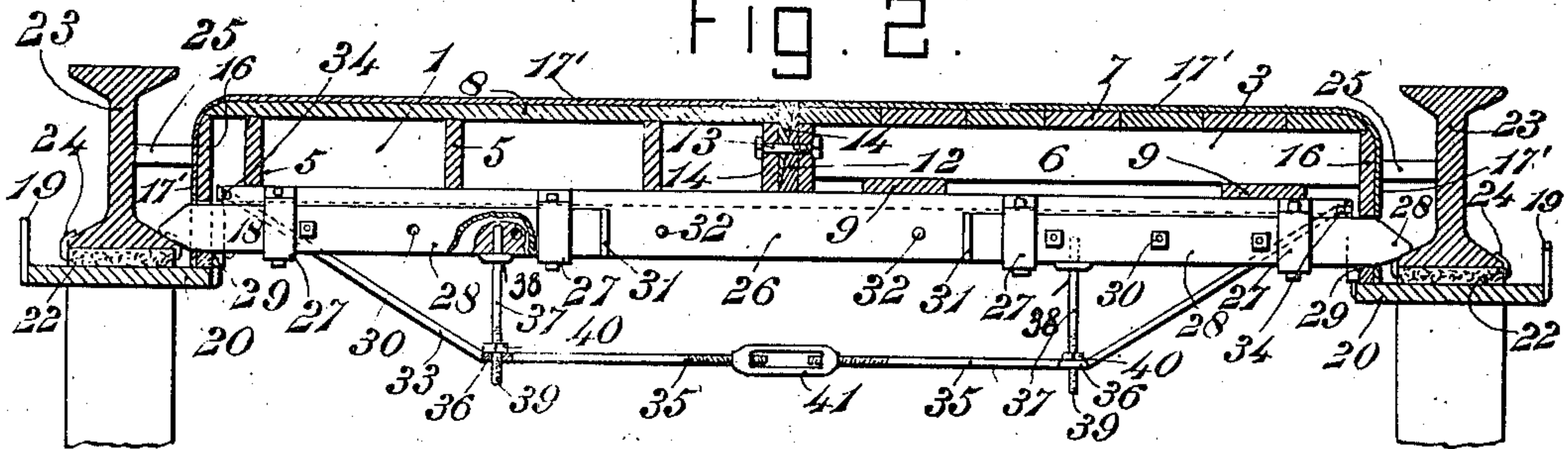
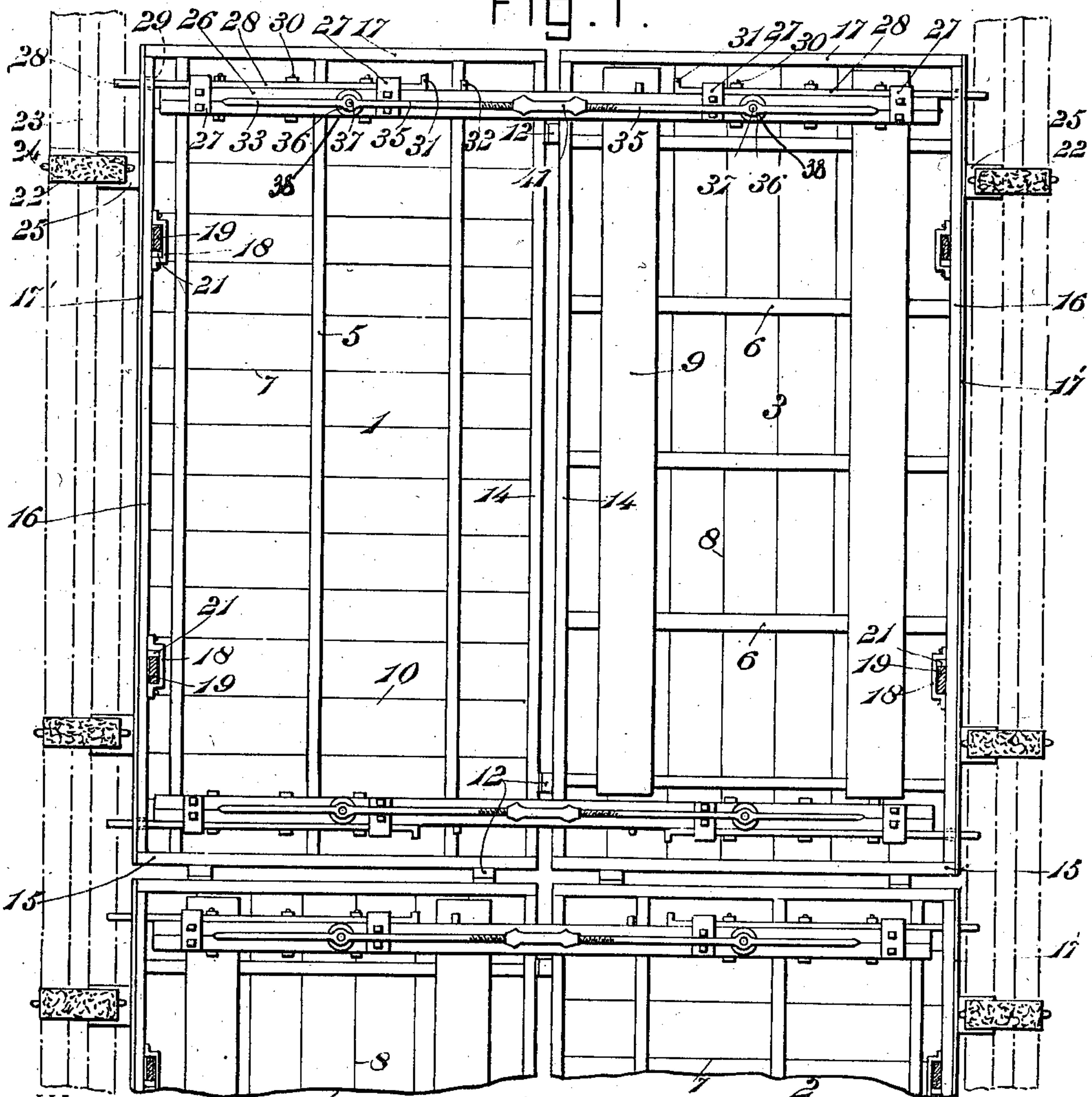


Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 3.

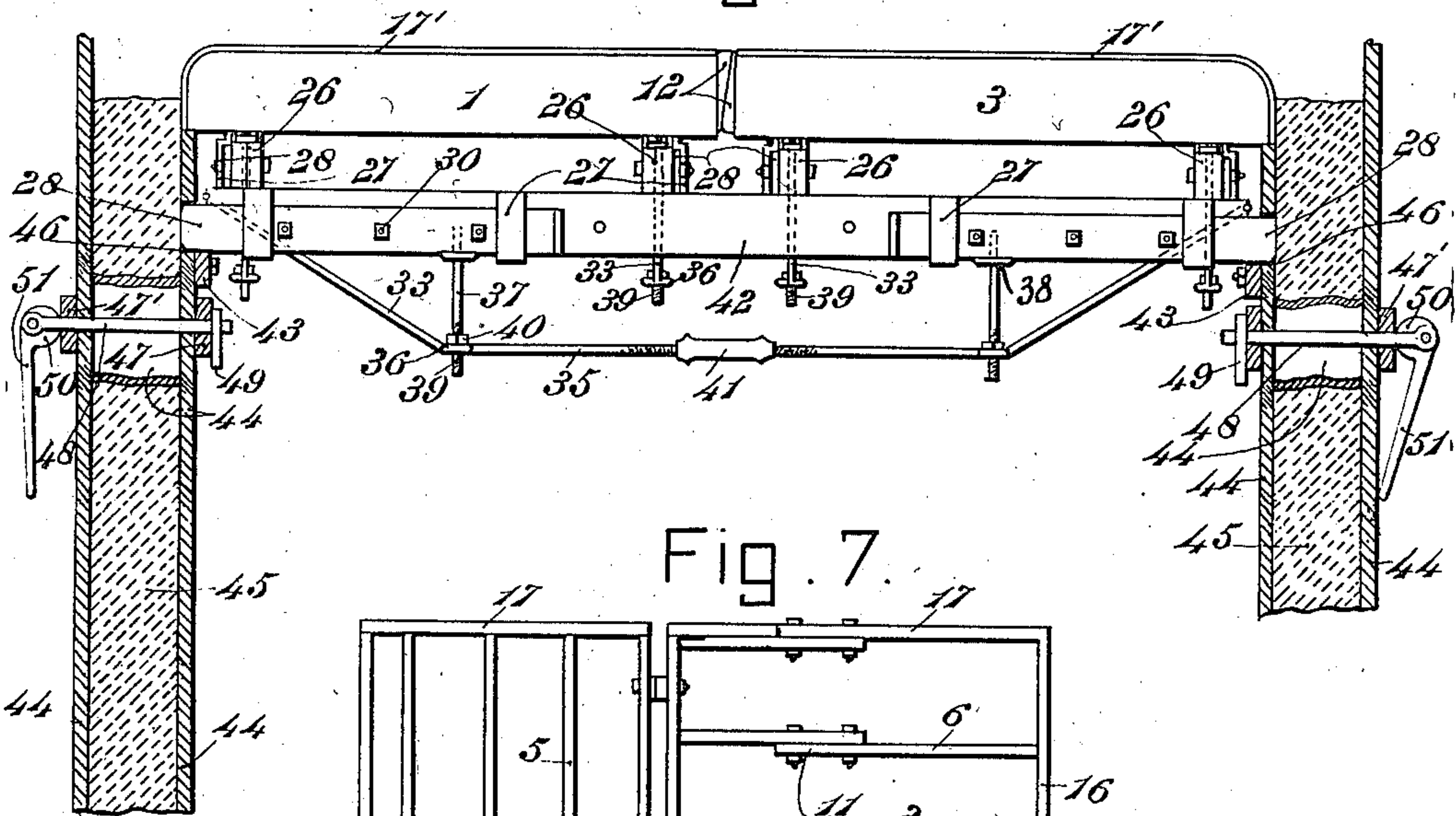


Fig. 7.

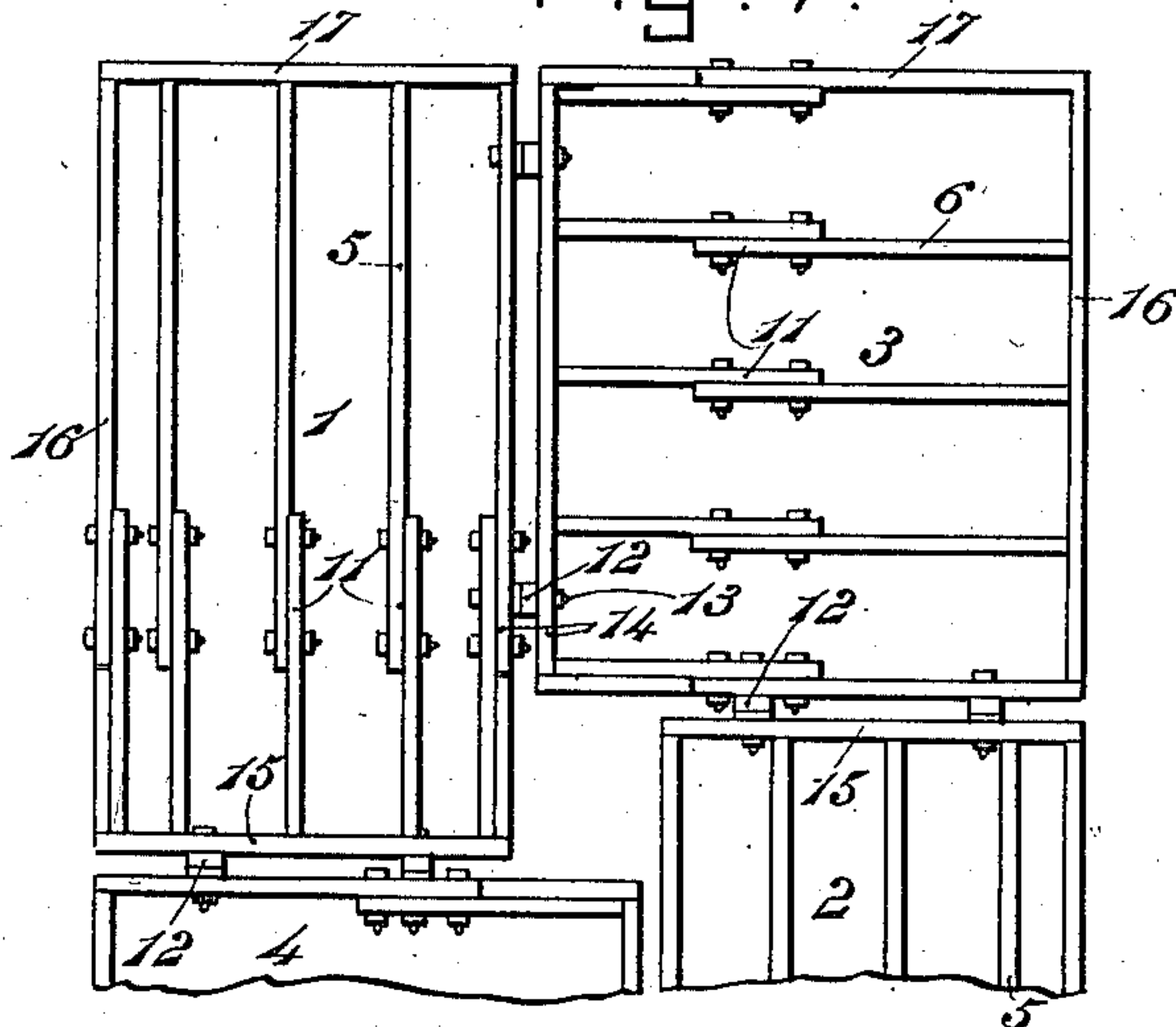


Fig. 6.

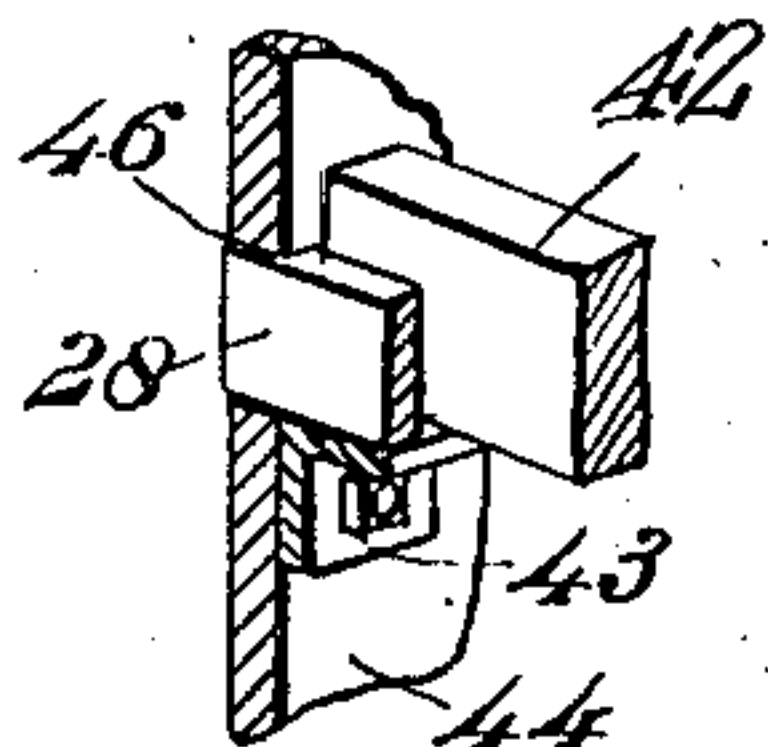
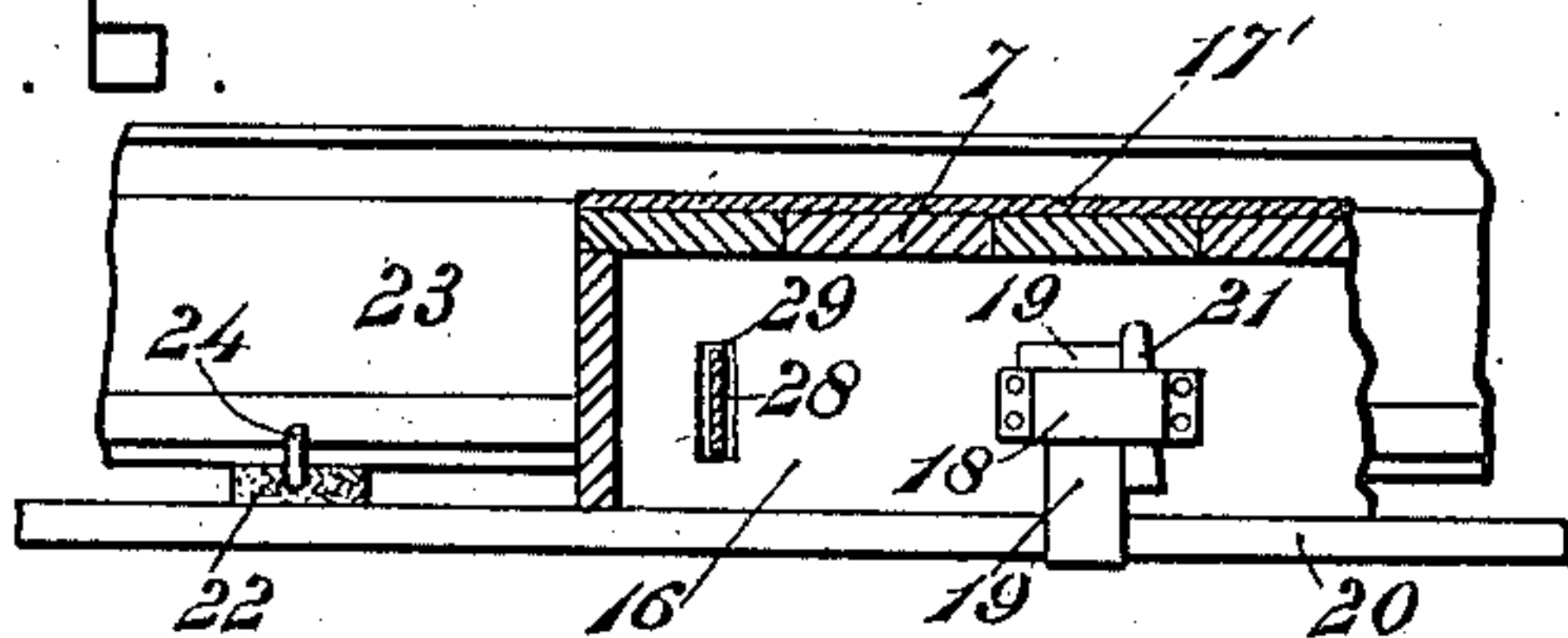


Fig. 4.

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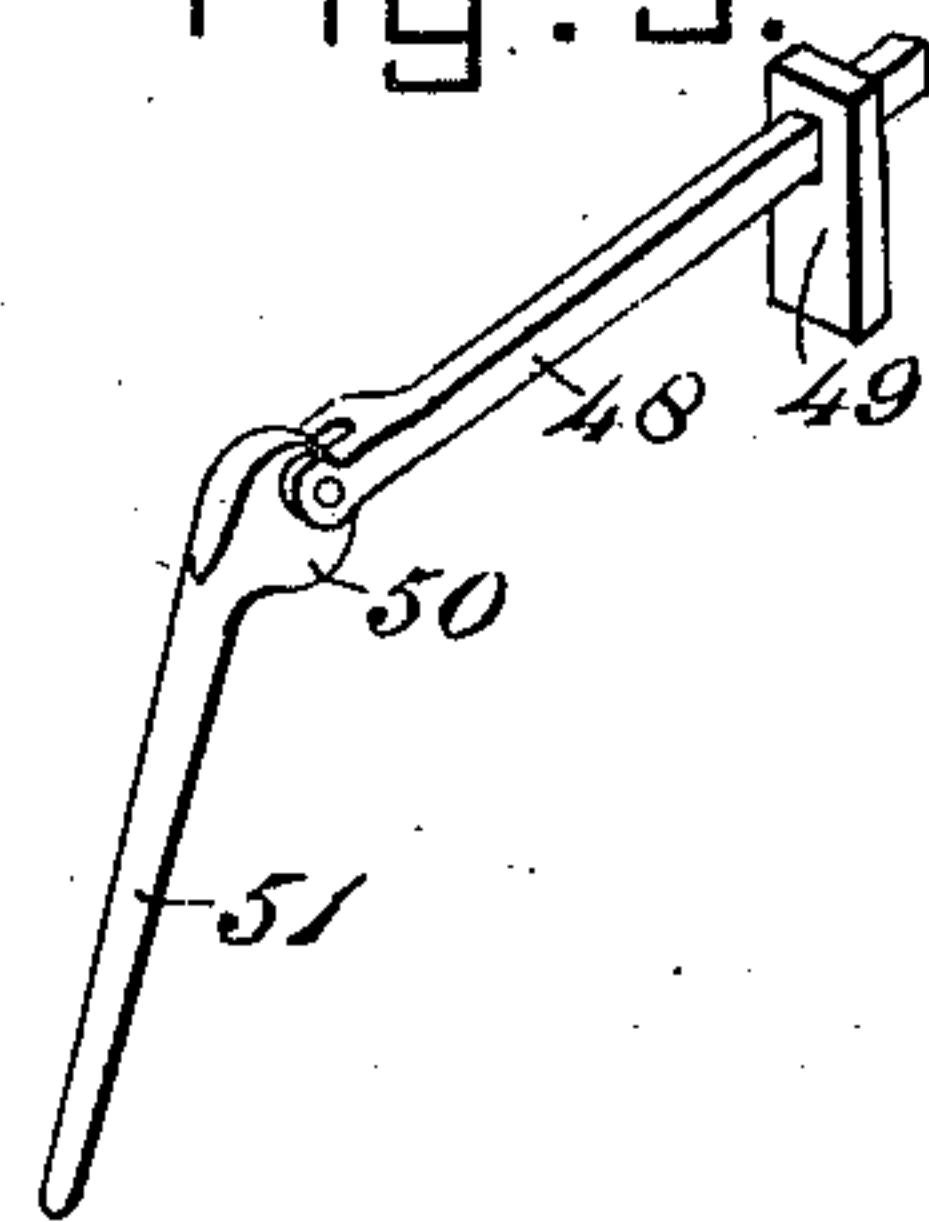
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Fig. 5.



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3 SHEETS—SHEET 3.

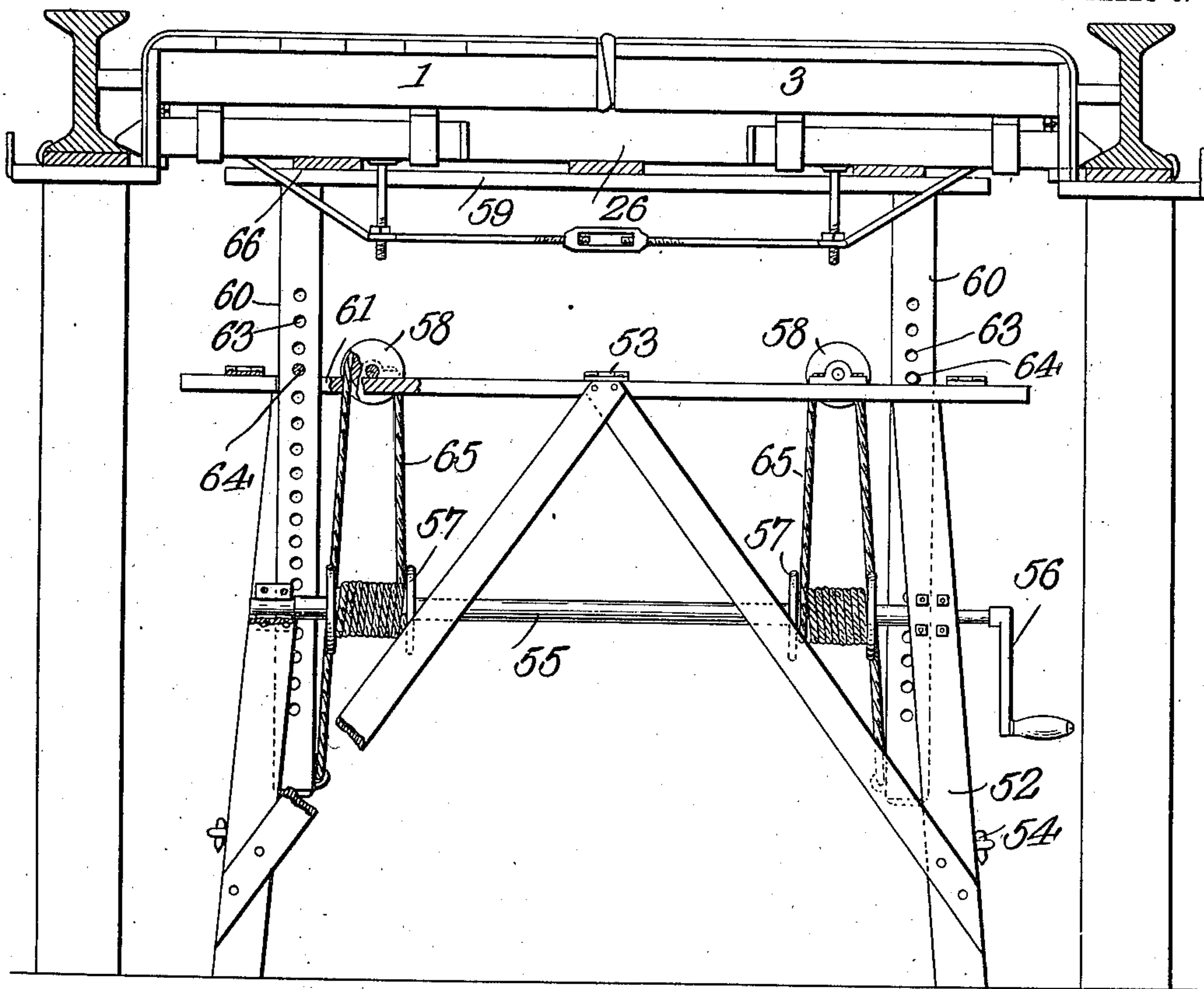


Fig. 8.

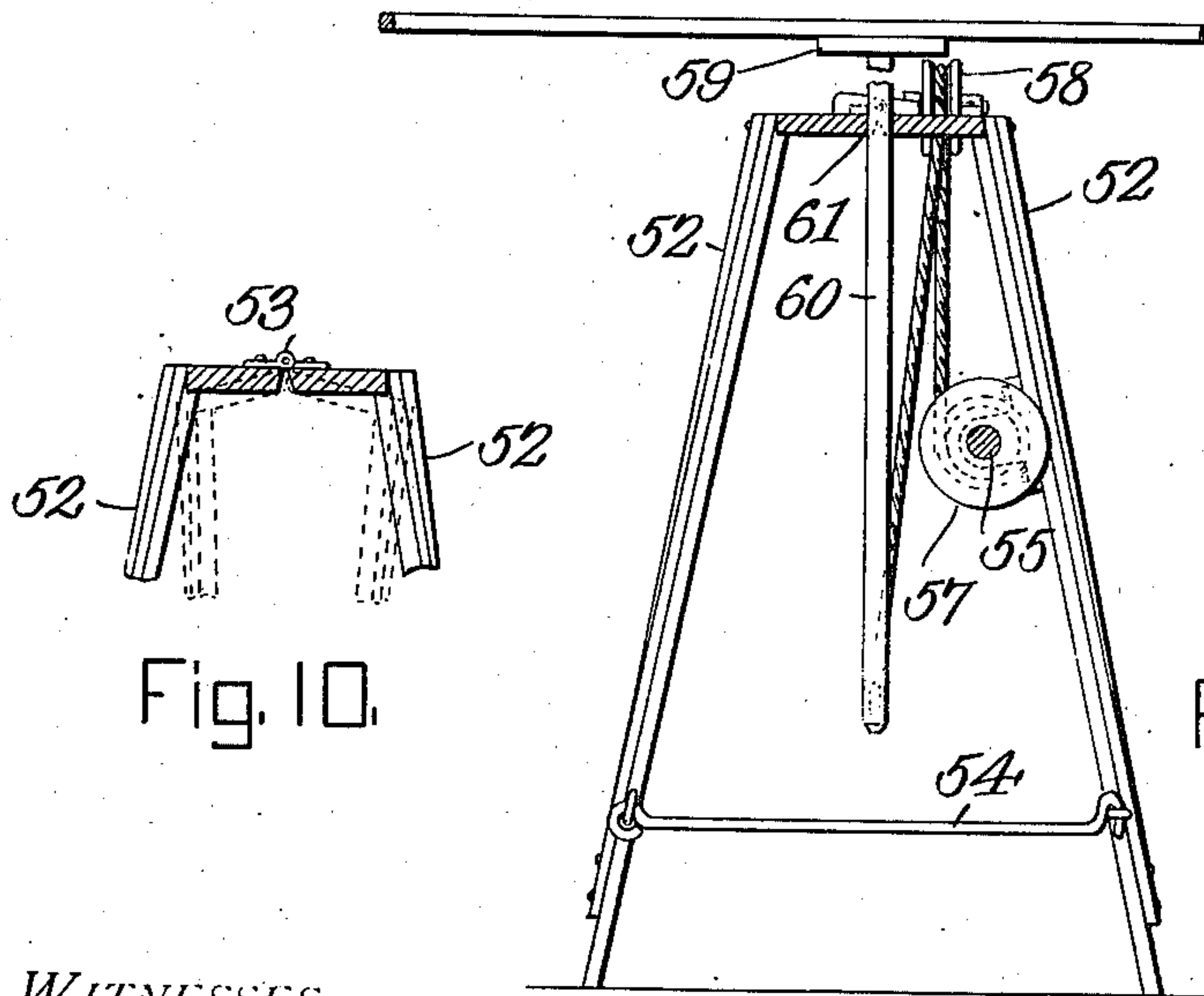


Fig. 10.

Fig. 9.

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UNITED STATES PATENT OFFICE.

GEORGE H. SHERWOOD, OF DAYTON, KENTUCKY.

SECTIONAL FORM AND TRUSS-SUPPORT.

949,093.

Specification of Letters Patent. Patented Feb. 15, 1910.

Application filed June 29, 1906. Serial No. 324,082.

To all whom it may concern:

Be it known that I, GEORGE H. SHERWOOD, a citizen of the United States, residing at Dayton, in the county of Campbell and State of Kentucky, have invented a new and useful Sectional Form and Truss-Support, of which the following is a specification.

This invention has relation to sectional form and truss supports adapted to be used in concrete constructions and it consists in the novel construction and arrangement of its parts as hereinafter shown and described.

The object of the invention is to provide improved sectional forms and truss supports for the same whereby concrete constructions may be produced with highly finished and ornamental appearance and which will be devoid of such mars or defects that would require the services of pointers to correct after the structure has been completed.

A further object of the invention is to so construct the sections and the truss supports that when they are in erected position, they will not materially interfere with the interior space of the structure and consequently the area within the structure is open and may be utilized for the accommodation of material or used as working space in connection with other features about the structure, it being understood that heretofore in providing forms for molding concrete structures that the molds themselves have occupied a great deal of space about the structure and consequently have materially interfered not only with the passing of concrete material etc., but with the handling of other materials used about the structure.

It is the object of the present invention to avoid this great disadvantage.

For the purpose of illustrating the method of application of the present invention, it is shown and described as applied to a ceiling although it may be applied for constructing other portions of a building.

In the accompanying drawings:—Figure 1 is a bottom plan view of the mold sections showing their relative positions. Fig. 2 is a vertical sectional view of the mold sections truss supported from beams. Fig. 3 is a vertical sectional view of the sections showing an arrangement of columns supporting the same. Fig. 4 is a detail perspective view of a portion of the column form showing a truss-supporting lug attached thereto. Fig. 5 is a perspective view of a clamp used

with the column molds and soffit plates or boxes. Fig. 6 is a detail sectional view of a portion of one of the mold sections showing the soffit-box attaching means. Fig. 7 is a bottom plan view of part of a set of mold sections showing a modified construction of the same. Fig. 8 is a side elevation of a raising and lowering means. Fig. 9 is an end elevation partly in section of said means. Fig. 10 is a transverse section of the upper ends of frame members of such means.

In the form of a ceiling, the sections are usually four in number although there may be six, eight, or even more according to the size of the ceiling. In the present instance as above stated, four sections are used for the purpose of illustrating the relative arrangement thereof. Sections 1 and 2 are of the same construction and in arrangement are located diagonally opposite each other. Sections 3 and 4 are of the same construction and are located diagonally opposite each other. In sections 1 and 2 the joists 5 extend longitudinally of the sections while in sections 3 and 4 the joists 6 extend transversely. In sections 1 and 2, the sheathing 7 extends transversely while in sections 3 and 4 the sheathing 8 extends longitudinally. The joists 5 are of greater breadth than the joists 6.

The planks 9 are secured against the lower edges of the joists 6 and extend transversely of the joists and longitudinally of the section. The difference in breadth between the joists 5 and 6 is equal to the thickness of the planks 9. Consequently the planks 9 extend throughout their length in alinement with the lower edges of the joists 5.

As shown in Fig. 1 of the drawing, the joists 5 and 6 are in single sections extending from one side of the mold section to the other while in the form as shown in Fig. 7 the joists 5 and 6 are in sections bolted together at 11. In the last form the said sections of joists may be disconnected from one another when the forms are taken down and consequently can be packed in small space for shipment or storage purposes. When the form or mold sections are in set up position, they are spaced apart at their opposite edges by the wedge-shaped blocks 12 and through the side boards 14 and through the said wedges 12 pass the bolts 13. Thus when the sections are spaced, they are held in

horizontal position in proper relation to each other. With the exception of the difference in construction, above pointed out, the said sections are similar and a description of one will answer for all.

Each section has at one edge the side board 14 and at one end an end board 15 and at the other side and end, the work facing boards 16 and 17. The sheet iron plate 17' covers the outer surface of the sections and extends down over the work facing boards 16 and 17 and is suitably secured at the lower edges of said boards. The inner faces of the work facing boards 16 are provided with the sockets 18 which are adapted to receive the flange extensions 19 of the soffit plates or boxes 20, the wedge 21 fitting between the edge of said flange and the end of the socket to bind the parts together. Thus the soffit plate 20 is supported and the blocks 22 are interposed between the upper face of the soffit plate and the beam 23. The concrete block 22 is provided with the wire 24, the ends of which may be bent up around the lower flange of the beam 23 and thus retained in position. The blocks 22 space the soffit plates 20 from the lower edge of the beam 23 and such space is filled with cement concrete which forms the coating for the lower edge of the beam. It is, of course, understood that as the work advances, the blocks 22 are removed and the space formerly occupied by them is filled with concrete. The blocks 25 space the work facing boards 16 and 17 from the sides of the beam 23 and are removed as the work advances in a manner similar to that described for the blocks 22.

A truss is provided for supporting the form or mold sections. Said truss consists of the intermediate portion 26 and the guides 27 which are suitably bolted or otherwise secured near the ends of the said intermediate portion 26. Said guides receive the side straps 28, the ends of which are adapted to pass through the perforations or keeper 29 formed in the work facing boards 16 and rest upon the flanges of the beam 23 or other suitable support. It will be observed by reference to Fig. 2 that the outer terminals of the side straps are oppositely beveled on different angles, the object of this arrangement being to constitute the straps a means for elevating the form sections which will be effected by causing the inclined terminals to be driven or forced laterally upon the flanges of the beams, and thereby secure the object sought. The said side straps 28 are provided with perforations 30 which, when the said side straps 28 are in extended position, register with corresponding perforations in the intermediate portion 26. When the said perforations are thus in register, bolts are passed therethrough and the said side straps 28 are held in extended position with re-

lation to the portion 26. The inner ends of the side straps 28 are provided with laterally extending flanges 31 and the intermediate portion 26 is provided with stops 32 which are located in the paths of the side straps 28 and are adapted to check the inward movement of the same. The flanges 31 may be used for withdrawing the straps and at the same time they retain the straps within the guides 27.

The truss rod 33 is secured at its ends to the ends of the intermediate portion 26 by means of the screw tap 34. From said point of connection between the ends of the truss rod 33 and the portions 26 the said rods descend at an angle and merge into the horizontal section 35. At the point where the inclined section meets the horizontal section 35 is located the eye 36. The stud bolt 37 has its upper end resting in a perforation in the lower edge of the intermediate truss portion 26. The shoulder 38 is fixed to the said bolt 37 and bears against the under side of portion 26. The lower end of said bolt passes through the eye 36 and is screw threaded as at 39. The tap 40 engages the thread 39 and bears at its under face against the upper edge of the eye 36. The horizontal portion 35 of the truss rod 33 is made in two sections which are joined together by the turn buckle 41.

When erected, the ends of the straps 28 are projected through the perforations 29 of the work facing boards 16 of the form or mold sections and the ends of the said straps 28 rest upon the flanges of the beams 23 or other suitable fixed supports. The mold or form sections are thus superimposed above the trusses and the soffit plates 20 are attached to the lower edges of the work facing boards 16 as above described. It sometimes happens that the beams 23 are not used or are not so spaced in constructions as to serve as supports for the form or mold sections as above described. When such is the case, supplemental trusses 42 are provided for supporting the mold supporting trusses, as shown in Fig. 3. Said supplemental trusses are of the same construction as above described and their intermediate portions rest upon the blocks 43 which are attached to the sides of the mold or casing 44 within which the columns 45 are molded. The ends of the straps of the said trusses 42 pass through the openings 46 provided in the mold 44. In connection with the mold 44 and also in connection with the soffit plates above described a clamp may be used in order to prevent the soffit plates or column from bulging. The strips or blocks 47 are spaced along the sides of the parts desired to be retained from bulging. The clamp 48 is provided with a lug 49 and at its opposite end the eccentric 50 is provided. Said eccentric is provided with a handle 51. The lug 49 is placed be-

hind one block 47 and the edge of the eccentric 50 is brought to bear against the outer side of the opposite block 47'. The eccentric 50 is then turned so that its longest diameter is brought between its pivotal point and the said strip within which its edge is in contact. Thus the two said blocks are held firmly together.

A means for raising and lowering the mold sections and truss supports is provided, as shown in Figs. 8 and 9. Said means consists of the frame members 52, 52 which are hinged together as at 53 at their upper ends. The cross braces 54 are attached at their ends to one of the frame members 52 and are adapted to engage suitable eyes provided upon the opposite frame member. The shaft 55 is suitably journaled to one of the frame members 52 and is provided at its end with a crank handle 56 or other means for rotating the same. The drums 57, 57 are located upon the shaft 55 and the pulleys 58, 58 are journaled in the top of the frame member 52 to which the shaft 55 is attached.

A scaffold member 59 is provided with the vertical legs 60 which pass through the registering recesses 61 cut at the inner meeting edges of the upper ends of the frame members 52. The said legs 60 are provided with the perforations 63 which are adapted to receive the pins 64 which, when located in a perforation 63, extend in transverse direction across the recesses 61 upon the upper ends of the frame members 52, thus supporting the scaffold member 59 at a desired distance above the upper ends of the frame members 52. The tackle 65 winds about the drums 57, passes over the pulleys 58 and at its ends is attached to the lower portions of the legs 60. It is obvious that by rotating the drums 57, the tackle 65 is wound thereon or unwound therefrom according to the direction in which the said drums are rotated and that as the tackle is passed over

the pulleys 58, the scaffold member 59 is raised or lowered.

As illustrated in Figs. 8 and 9 of the drawings, the trusses 26 and the mold forms are supported upon the upper end of the scaffold member 59 by means of the boards or scantling 66.

The apparatus just above described is intended to be used for putting up and taking down trusses and mold sections and, when the latter have been properly positioned, the said apparatus is removed and the space below the said trusses and mold sections may be utilized for handling the material used in the structure. By means of the hinged connections between the upper ends of the frame members 52, the said members may be swung together and thus be in compact form for shipment or storage purposes.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:—

A centering apparatus for floors and ceilings comprising a mold, a transverse beam supporting said mold, a truss rod below said beam having a central extensible horizontal portion and inclined end portions, the upper extremities of said end portions being secured to the beam and the truss rod being provided with eyes at the junctions of its straight and inclined portions, stud bolts bearing at their upper ends against the beam and having their lower ends threaded and projecting through the eyes in the truss rod, and nuts mounted on the said threaded ends above the truss rod and bearing against the same.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

GEORGE H. SHERWOOD.

Witnesses:

EDW. T. SHOMBERGER,
CHARLES M. RAINS.