

(No Model.)

3 Sheets—Sheet 1.

H. C. HODGES.
ROOF TRUSS.

No. 457,418.

Patented Aug. 11, 1891.

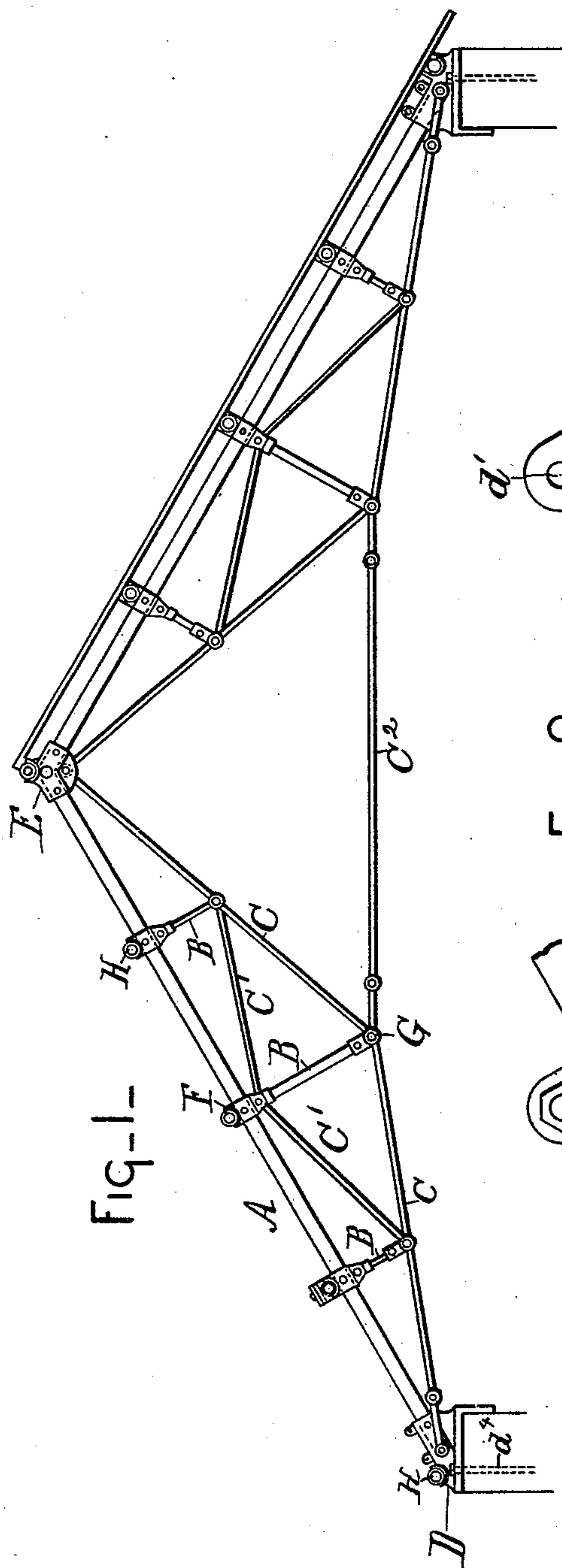


FIG-1-

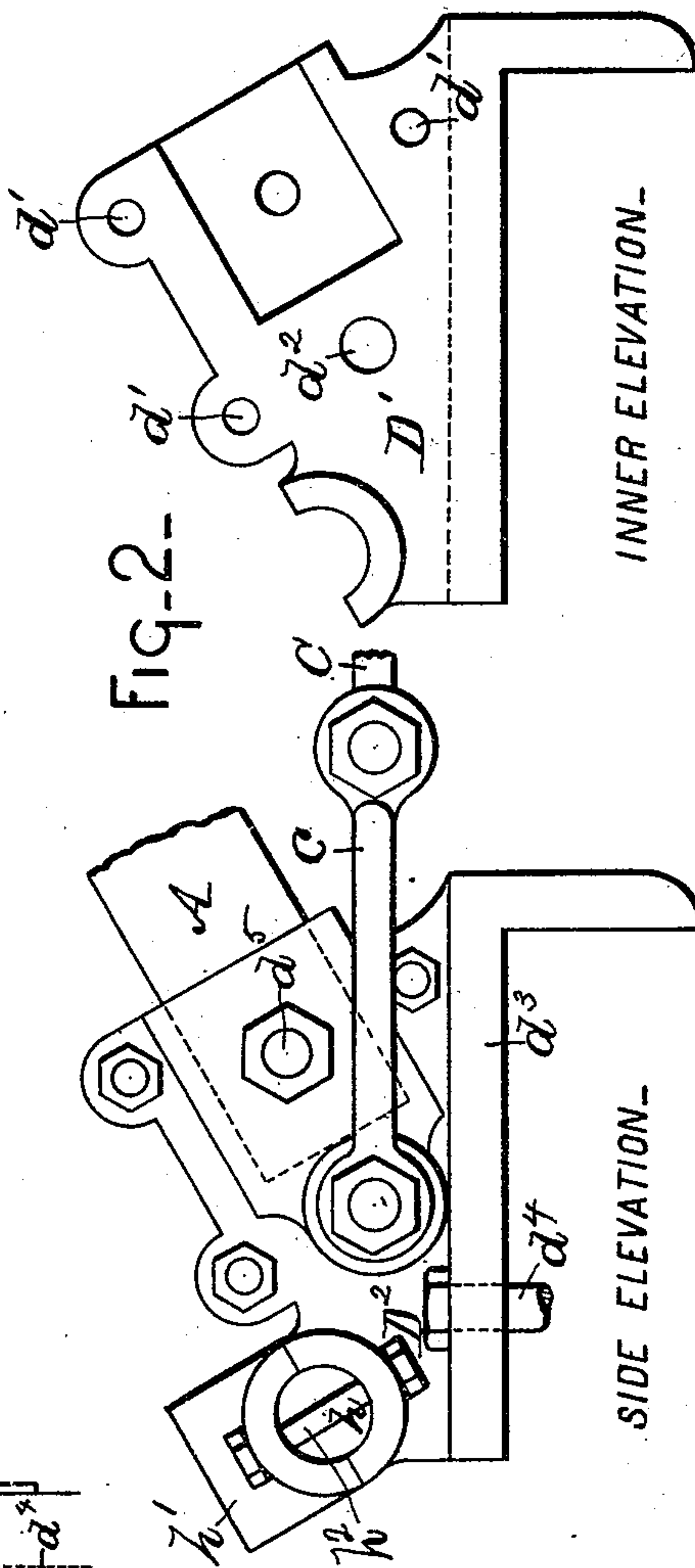


FIG-2-

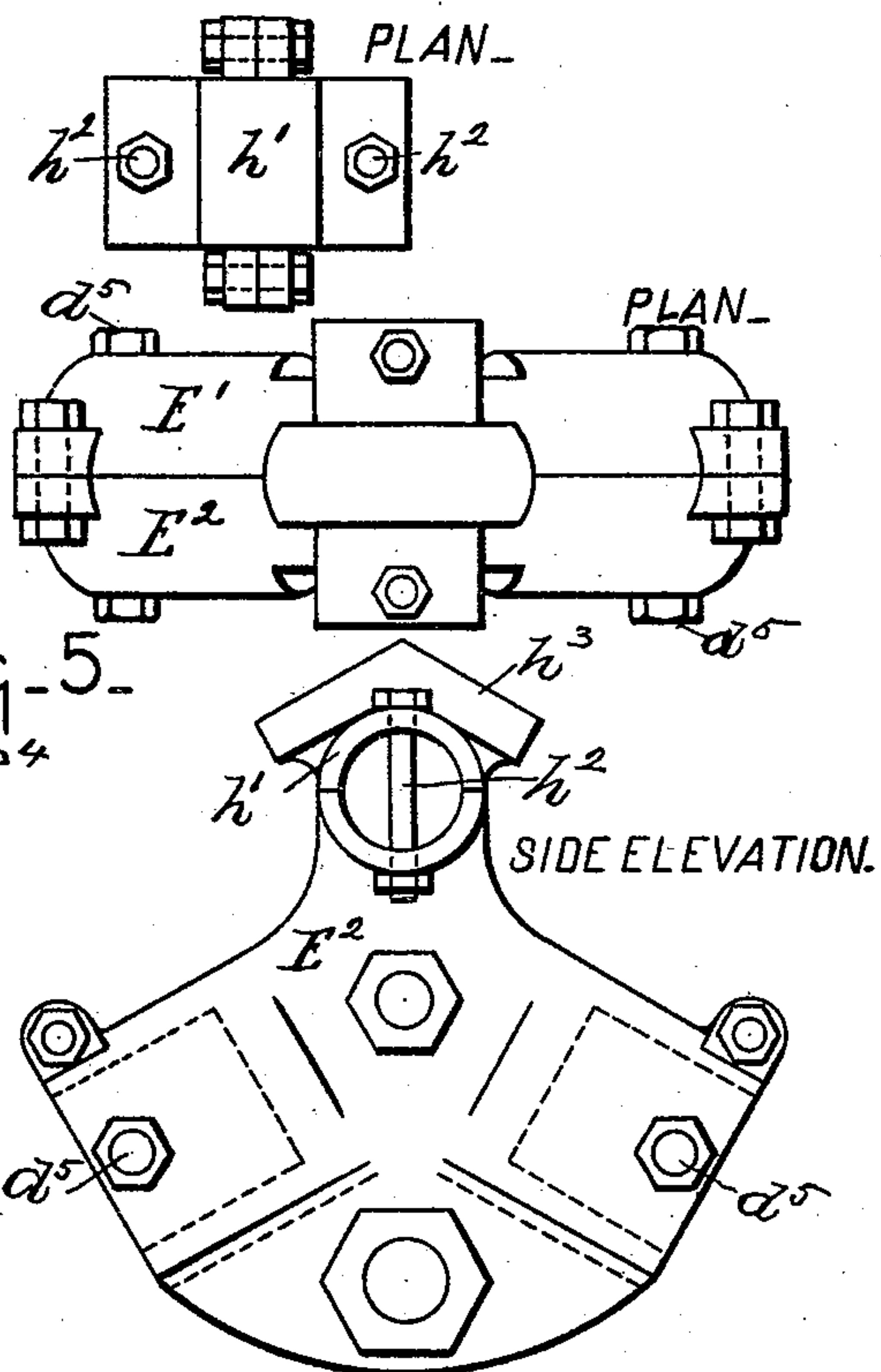
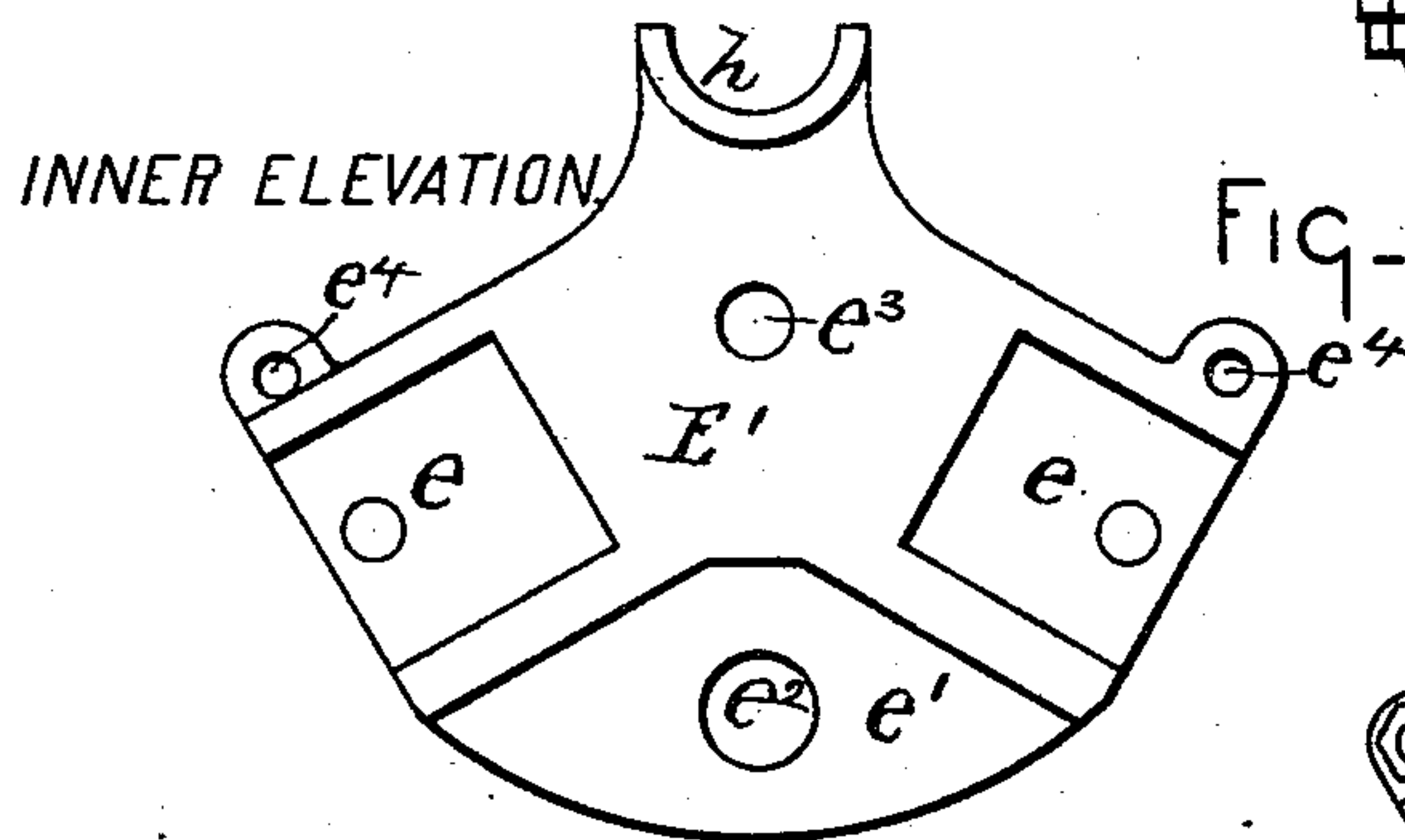
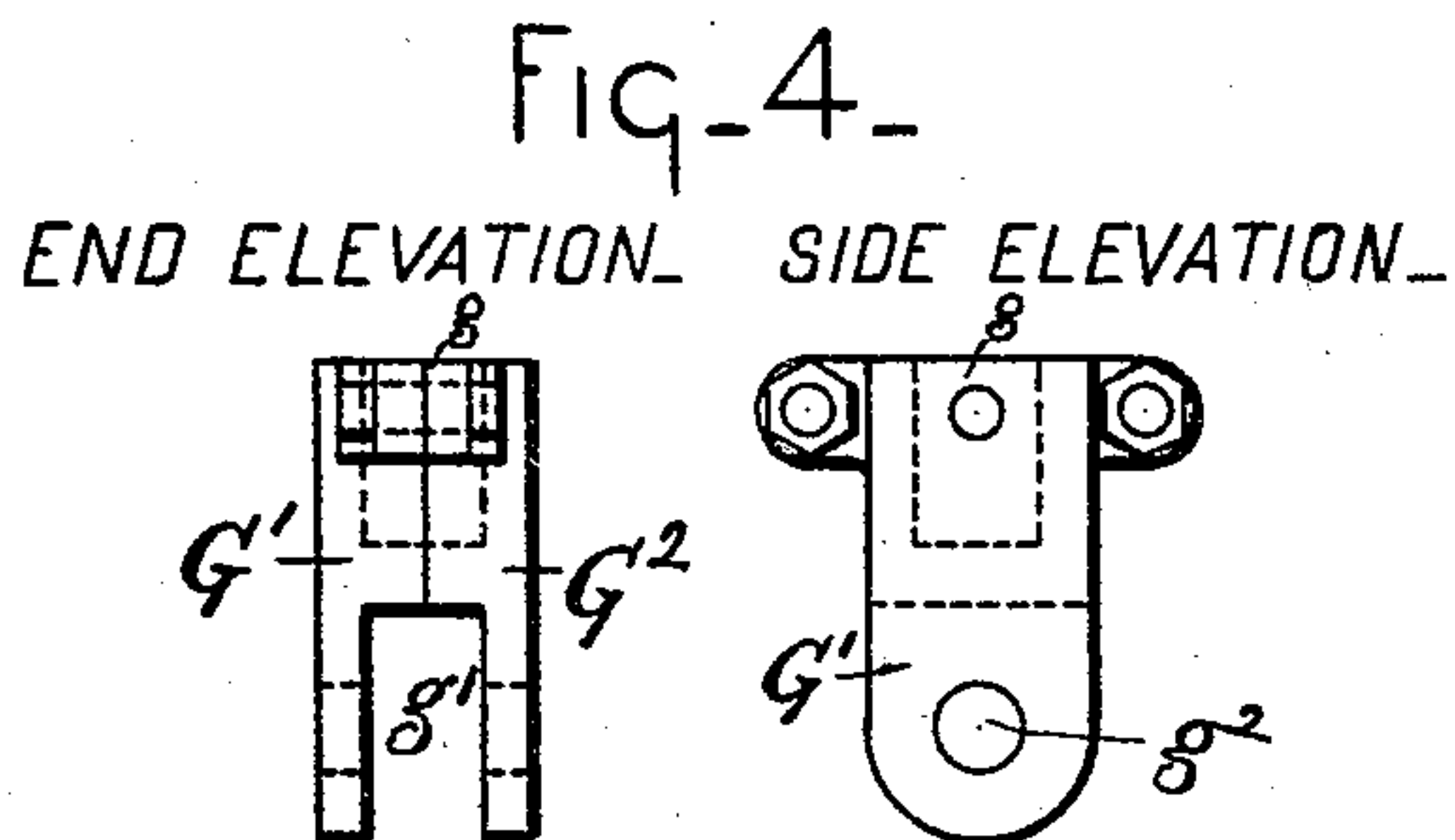
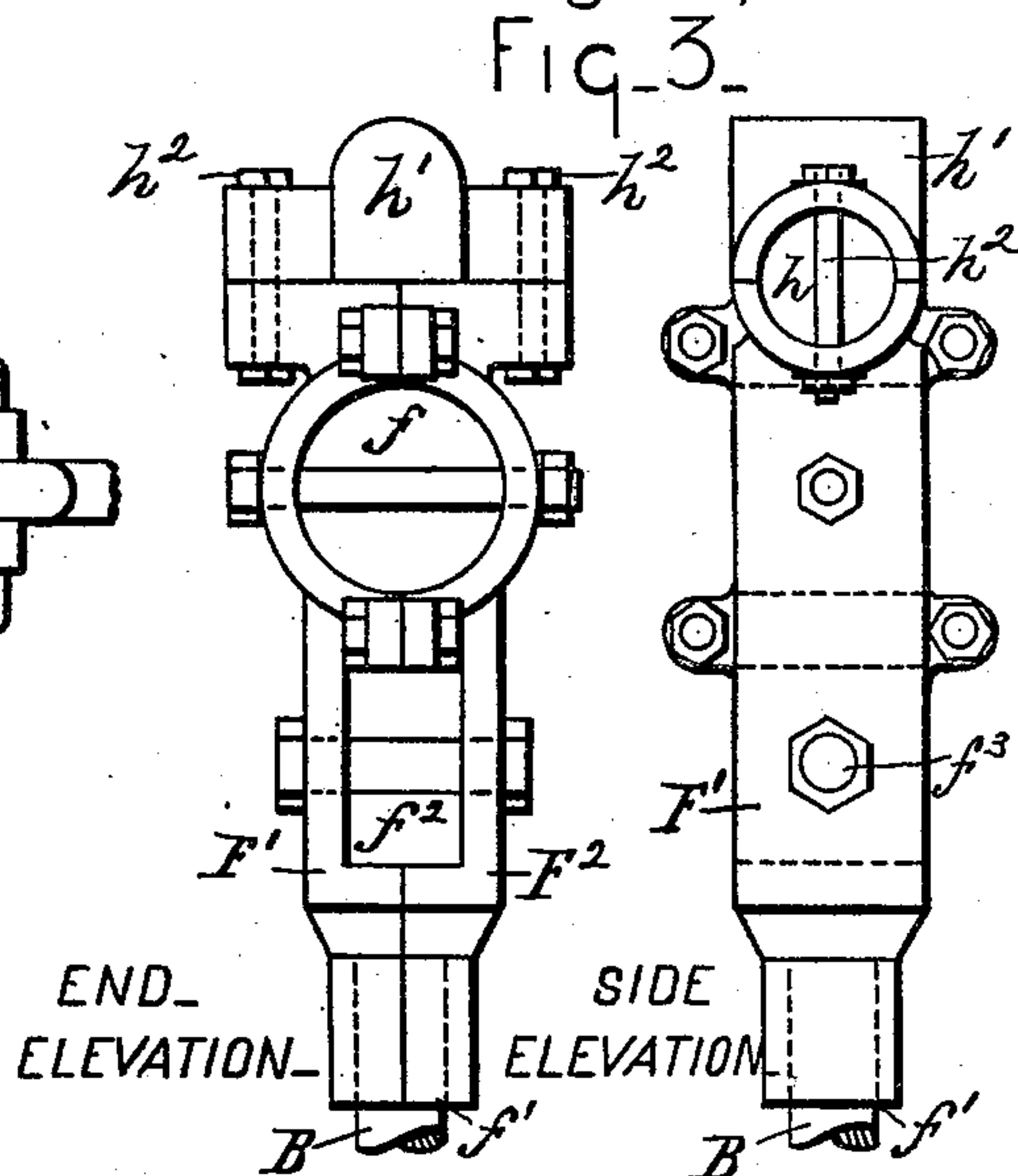
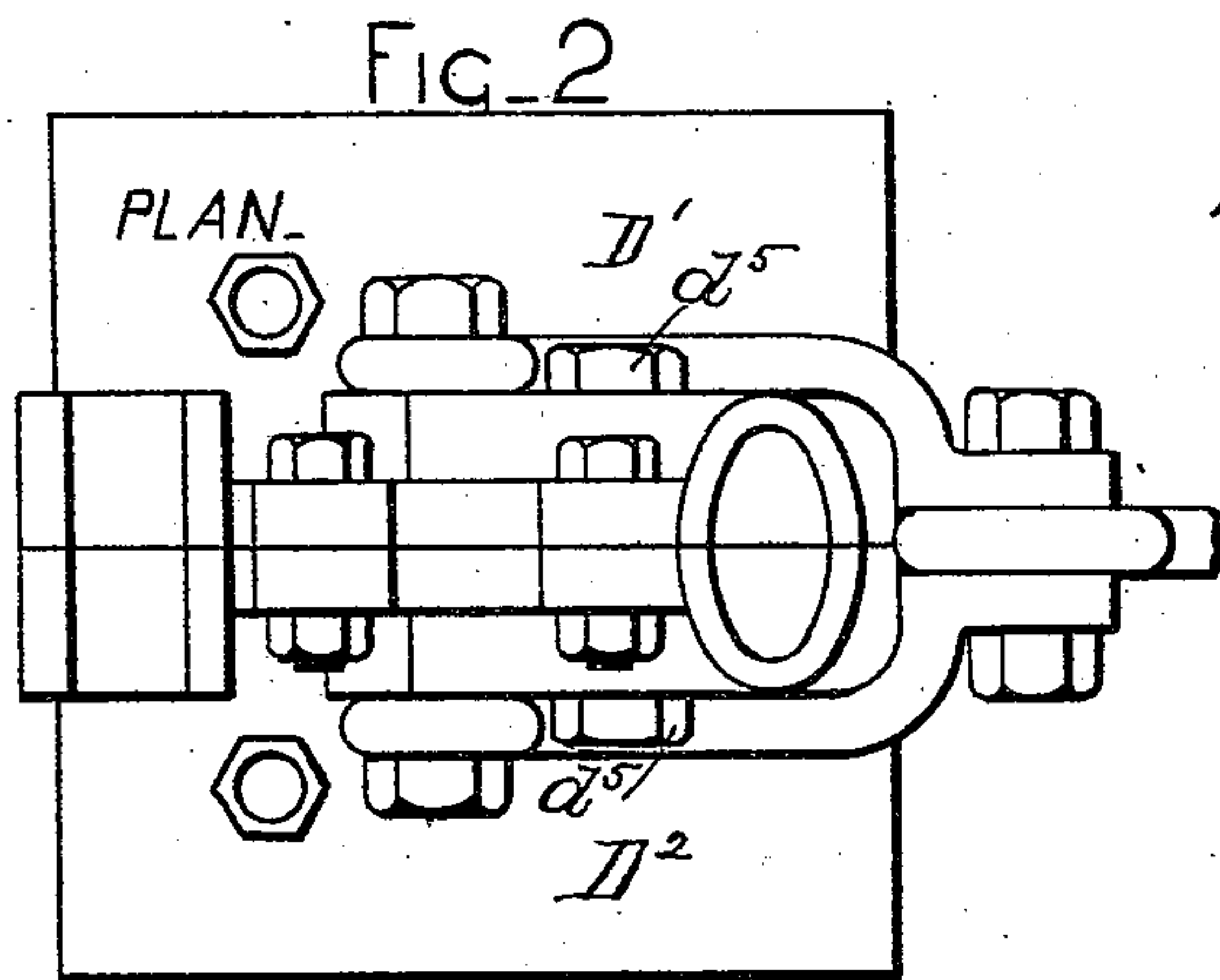
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Fig-6-

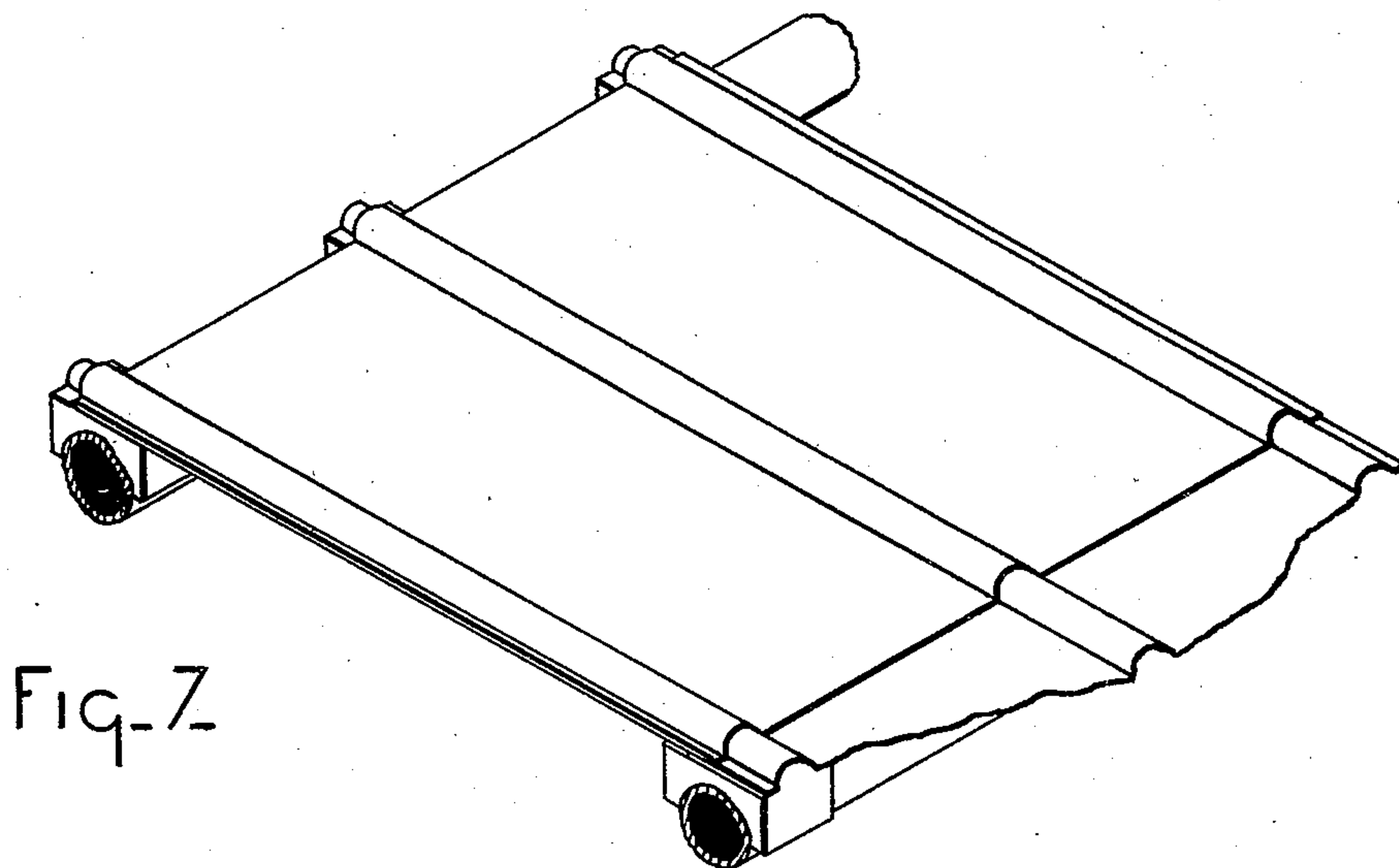
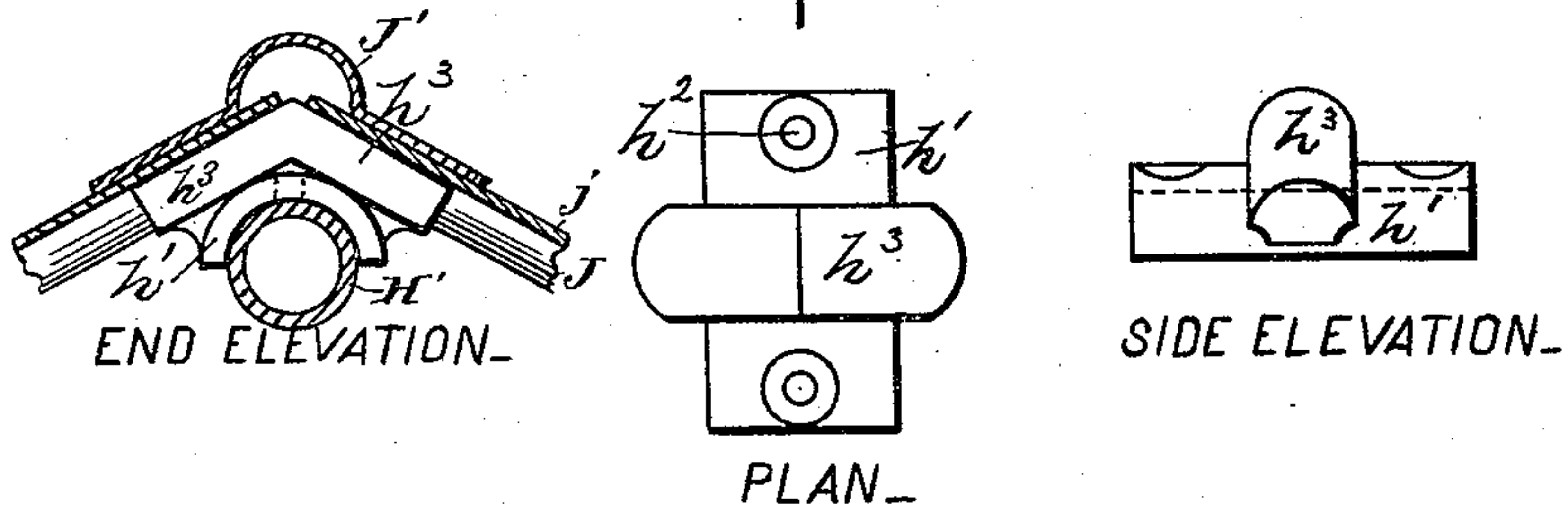


Fig-7

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UNITED STATES PATENT OFFICE.

HENRY C. HODGES, OF DETROIT, MICHIGAN.

ROOF-TRUSS.

SPECIFICATION forming part of Letters Patent No. 457,418, dated August 11, 1891.

Application filed June 19, 1890. Serial No. 355,999. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. HODGES, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Roof-Trusses; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

In the drawings, Figure 1 represents a side elevation of the roof-truss embodying my improvements. Fig. 2 is a separate view of the parts constituting the fitting at the point where the roof-truss joins the coping or wall. Fig. 3 is a separate view of the joints where the uprights or compression members of the truss join the upper element of the roof-girder. Fig. 4 is a separate view of the fitting at the base of said upright posts. Fig. 5 is a separate view of the parts constituting the fitting at the apex of the truss. Fig. 6 illustrates the cap-piece provided with filling-blocks made integral therewith for receiving corrugated metal roof-sheets at the apex of the truss and showing over the end elevation the two sloping sections of corrugated roofing superposed thereon and a covering-piece over the joint and comb-pipe in place. Fig. 7 shows a detached section of corrugated roofing fitted upon the purlins.

It is the purpose of my invention to improve the construction of metallic roof-trusses, and in illustrating my said roof I represent the upper inclined elements or girders proper of the roof as of pipe. The purlins are also represented as of pipe or rod.

My invention consists, essentially, in the fittings at different points throughout the truss, which said fittings are each made in two parts adapted for and to be clamped upon the meeting cylindrical pipe or rod elements, and in other features of construction which will be hereinafter specified and claimed.

In carrying out my invention, A represents the rafter elements or the upper elements of the roof-truss.

B represents the posts or uprights, the said

elements A and B being compression members; C, the main strain-rods of each rafter; C', the subordinate straining-rods or counter-braces, and C² a tie brace or rod, which said elements C, C', and C² are extension members.

D represents the fitting at the end of the truss where it joins the wall or coping; E, the fitting at the apex of the truss; F, the fitting at the upper end of the struts or posts, and G the fittings at the lower ends of the struts or posts.

H represents the roof-purlins.

The fitting D is composed, essentially, of two parts D' D². They are each provided with semi-cylindrical cavities *d* for the reception of the lower end of the pipe or rod rafter A, and with bolt-holes *d'* for the passage of bolts whereby the parts are clamped together.

*d*² is an orifice for the passage of a large bolt designed to receive the ends of the clevis *c* of the straining-rod C. It is placed, preferably, in line with the middle of the rafter A, so as to assist the fitting to sustain the thrust of the rafter.

*d*³ is a plate formed integral with the casting D' D². It is adapted to rest flat upon the coping and may also project downward upon the interior of the wall, as shown, to insure a firm snug bearing.

h is a semi-cylindrical cavity adapted to receive the purlin H.

h' is a semi-cylindrical cap adapted to fit over the purlin, and a bolt *h*² may pass down through the purlin and the flange of the seat beneath in order to hold all the parts firmly in place. The plates *d*³ may also be provided with suitable orifices for the reception of anchor-bolts *d*⁴ for anchoring the truss to the wall.

The fittings F at the top of the struts are made in like manner of sections F' F². Each is provided with a semi-cylindrical cavity *f* for the rafter A and with a semi-cylindrical cavity *f'* for the end of the upright B.

At *f*² a cavity is left for the eyes at the ends of the counter-braces C', and a bolt-hole is provided for the passage of a bolt *f*³, passing through said eyes and sustaining the strain of the said counterbrace-rods. The said bolt may serve at the same time to clamp the two

parts F' F^2 of the fitting together. There may also, if desired, be bolt-holes for independent bolts designed to clamp these parts together. This fitting is provided, the same
5 as the fitting D, with semi-cylindrical cavities h , semi-cylindrical cap h' , and retaining-bolt or other fastening h^2 .

The fittings G at the base of the struts may be formed in like manner of parts G' G^2 , each
10 part provided with semi-cylindrical cavities g for the reception of the base of the upright or strut and with a cavity g' for the reception of the eyes of the straining-rods C, C' , and C^2 , and a bolt-hole g^2 is provided for the bolt
15 designed to pass through the said eyes. Of course any one or more of the said rods may be clevised upon the outside of the said fitting and upon the said bolt instead of passing into the recess between the two plates.
20 The said clevised bolt may serve to hold the parts of the plate together, or there may be independent clamping-bolts for holding the parts together. Thus, for instance, in each of the said fittings there may be bolts d^5 passing through the two plates and through the
25 element of the truss that enters and is clamped by the said plates. The fitting E at the apex of the truss is of like construction and consists of parts E' E^2 . Each part is provided with semi-cylindrical cavities e for the
30 reception of the rafters A. A cavity e' is provided for the reception of the eyes at the upper ends of the straining-rods C, and a bolt-hole e^2 is adapted to receive the bolt which
35 takes the strain of the strain-rods.

e^3 represents a bolt-hole for the reception of a clamping-bolt for clamping the parts of the fitting together. e^4 represents ears provided with bolt-holes for a like purpose of
40 clamping the parts of the fitting together, and I would have it understood that similar ears and bolt-holes may be employed on the fittings F and G. This fitting E, like the fittings D and F, is provided with semi-cylindrical
45 cavities h for the transverse pipe H' , which constitutes the comb of the roof, and also with caps h' and retaining-bolts h^2 or other fastenings.

In the caps h' , connected with the fittings
50 D and F, I prefer, generally, that the upper side of the cap be adapted with a filling-piece like the filling-piece h^3 to fit the corrugation in that portion of a corrugated roof structure which is to be superposed thereon, and the
55 cap h' at the apex may have an angular filling-piece h^3 made integral therewith, one branch of it fitting the corrugation upon one side of the roof and the other angle fitting a corresponding corrugation on the other slope
60 of the roof.

J represents the roof-sheets with corrugations j , and J' is a covering-piece with corresponding corrugations, into which the filling-piece h^3 enters, and which covering-piece
65 covers the union of the two sloping surfaces of the roof, which unite at the comb. Should it be desired to interpose any other frame-

work between the rafters A and the roof, these caps h' may on their upper surfaces be made to properly fit and engage with any
70 such super frame-work instead of being shaped to fit roof-corrugations.

Of course I do not limit myself to any particular form of roof-truss, and the construction of the fittings is equally well adapted
75 for other forms of truss, whether for roofs or other purposes, and I would have it understood that my claims contemplate such employment of the said improvement and any necessary changes in form which adapt the
80 said fittings for any particular location.

What I claim is—

1. The combination, with a roof-truss at its apex, of a two-part casting adapted to embrace the ends of the meeting members and
85 clamp upon them by uniting-bolts, each part of said casting provided with a transverse curved socket for the reception of a transverse pipe to constitute the comb of the roof, and a single cap adapted to cover said pipe and
90 unite both sections of said two-part fitting and having an angular filling-piece h^3 , adapted to fit into the corrugations of the cap-piece that joins the oppositely-sloping portions of the roof, which unite at the comb, substantially
95 as described.

2. The combination, with a roof-truss, of a two-part fitting at its extremity where it rests on the wall, shaped with semi-cylindrical cavities, whereby it is adapted to receive the ex-
100 tremities of a cylindrical pipe or rod, compression member A, transverse bolts binding the parts together, said parts provided with a transverse semi-cylindrical seat adapted to receive a cylindrical pipe or rod purlin, and a
105 semi-cylindrical cap uniting both said parts and binding said pipe or rod in place, substantially as described.

3. The combination, with a roof-truss, of cylindrical pipes or rods constituting its compression members A, and two-part fittings F,
110 each provided with semi-cylindrical cavities whereby they embrace the member A, also with transverse semi-cylindrical cavities for the reception of a cylindrical pipe or rod purlin, and each with a single semi-cylindrical
115 cap adapted to clamp the said purlin into the cavity and unite the two-part fitting, substantially as described.

4. The combination, in a roof-truss, of compression members A, consisting of cylindrical
120 pipes or rods, two-part fittings with semi-cylindrical cavities at different points on the length of each, adapted to receive and clamp said member, said fittings provided with transverse semi-cylindrical cavities for the reception of pipe or rod purlins H, and each provided with common caps h' , and the latter having a filling-piece at its top adapted to receive and fill the corrugation of a corrugated roofing-sheet, substantially as described.
125 130

5. A roof-truss in which all the compression and extension members are cylindrical pipes

or rods, combined with two-part fittings at their points of junction, said fittings provided with semi-cylindrical cavities for the reception of said compression members, binding-bolts, transverse cylindrical cavities for purlins, likewise of cylindrical pipe or rod, where the same are joined thereto, and semi-cylindrical caps adapted to bind said purlins in position on said two-part fittings, substantially as described.

6. The combination, with the two-part fitting at the apex of the truss, adapted to embrace and sustain the meeting elements at this point, of a seat formed at the apex for the reception of a cylindrical pipe or rod purlin, and a cap, with filling-pieces or equivalent, adapted on its upper surface to fit the roof-

ing-plates or superstructure, substantially as described.

7. The combination, with a roof-truss at the points where its other elements join the rafters, of a two-part fitting provided in its top with a semi-cylindrical seat for a rod or pipe purlin, and a semi-cylindrical clamp fitting over said purlin, and a through-bolt passed through the clamp and the purlin and engaged with the fitting, substantially as and for the purposes described.

In testimony whereof I sign this specification in the presence of two witnesses.

HENRY C. HODGES.

Witnesses:

M. A. REEVE,

C. J. SHIPLEY.