

Nov. 10, 1959

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2,911,686

OUTDOOR PROJECTION SCREEN OR THE LIKE

Filed Sept. 13, 1955

3 Sheets-Sheet 1

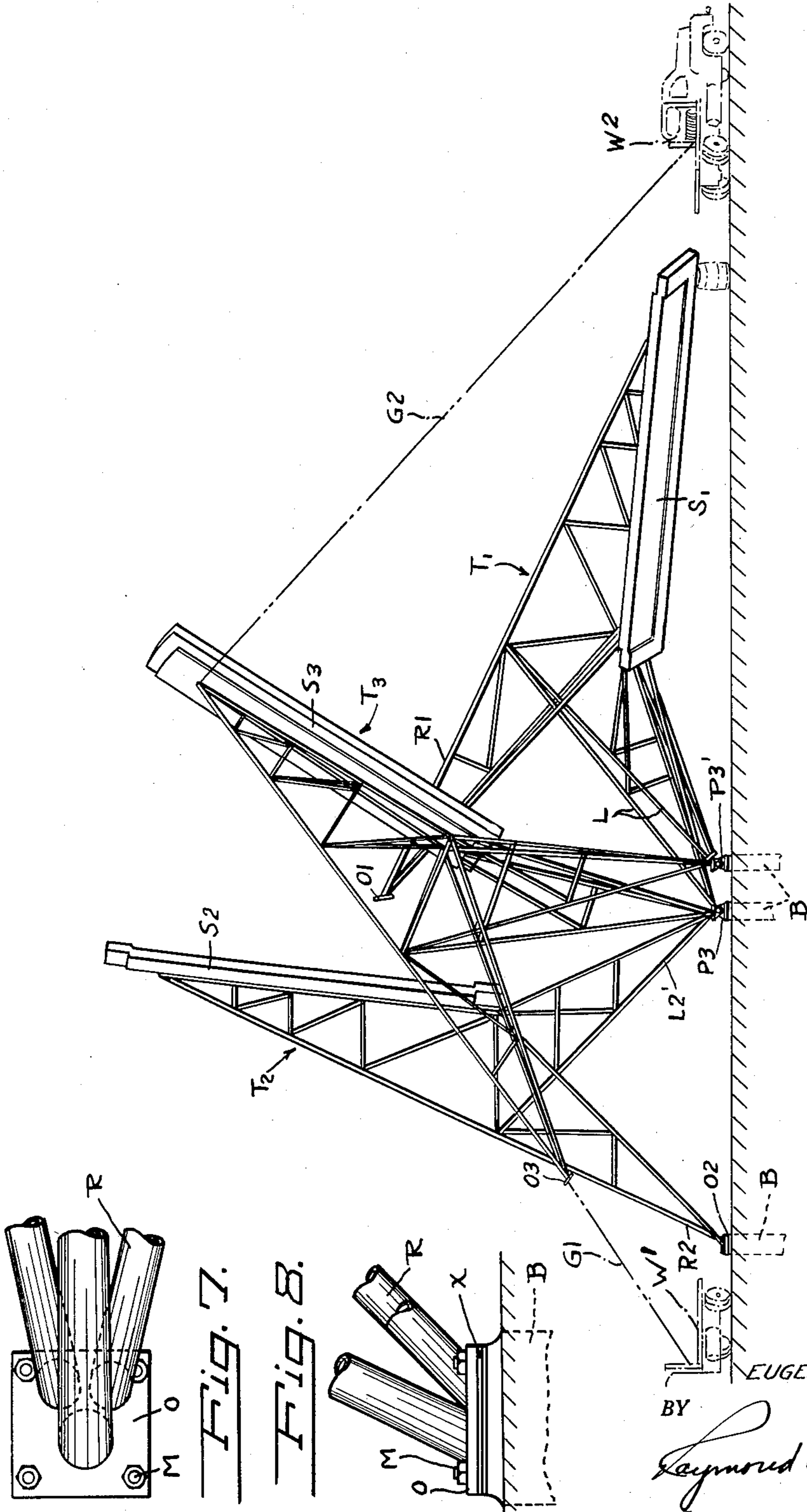


Fig. 1.

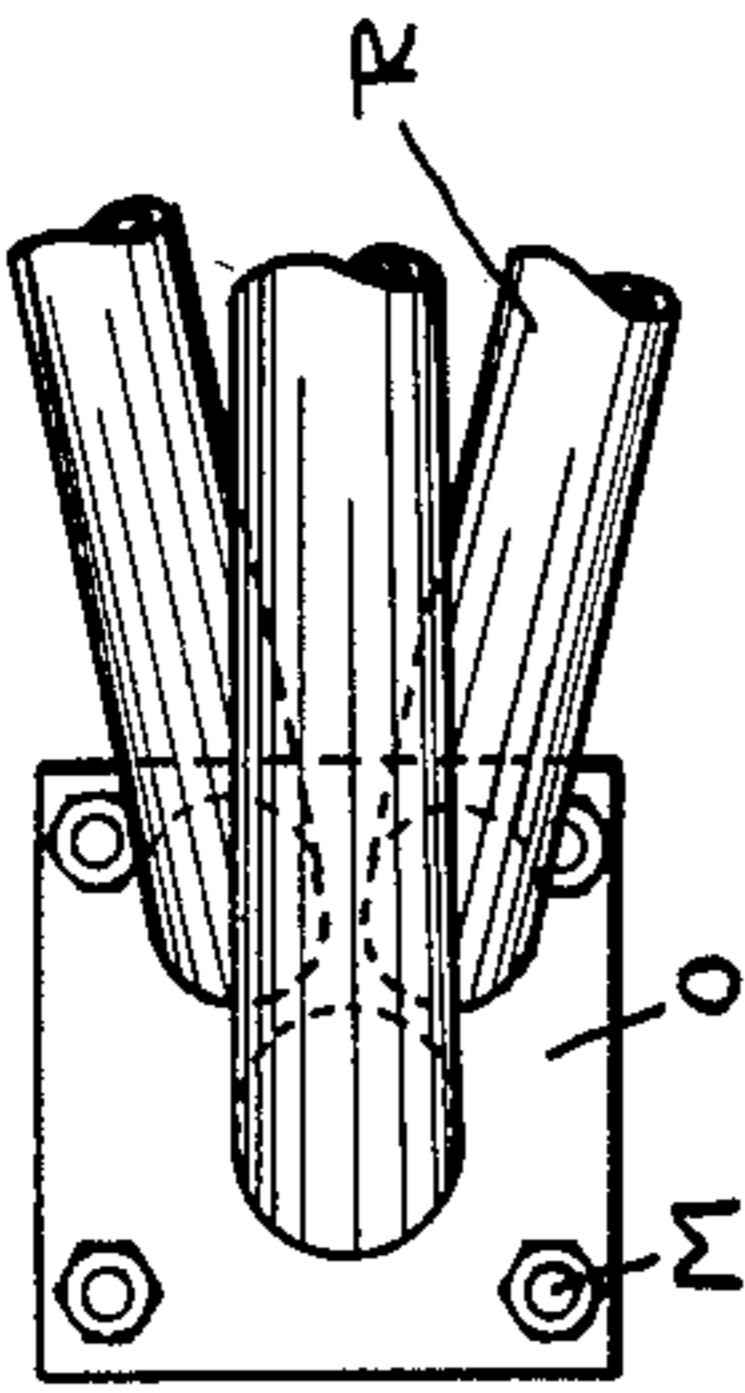
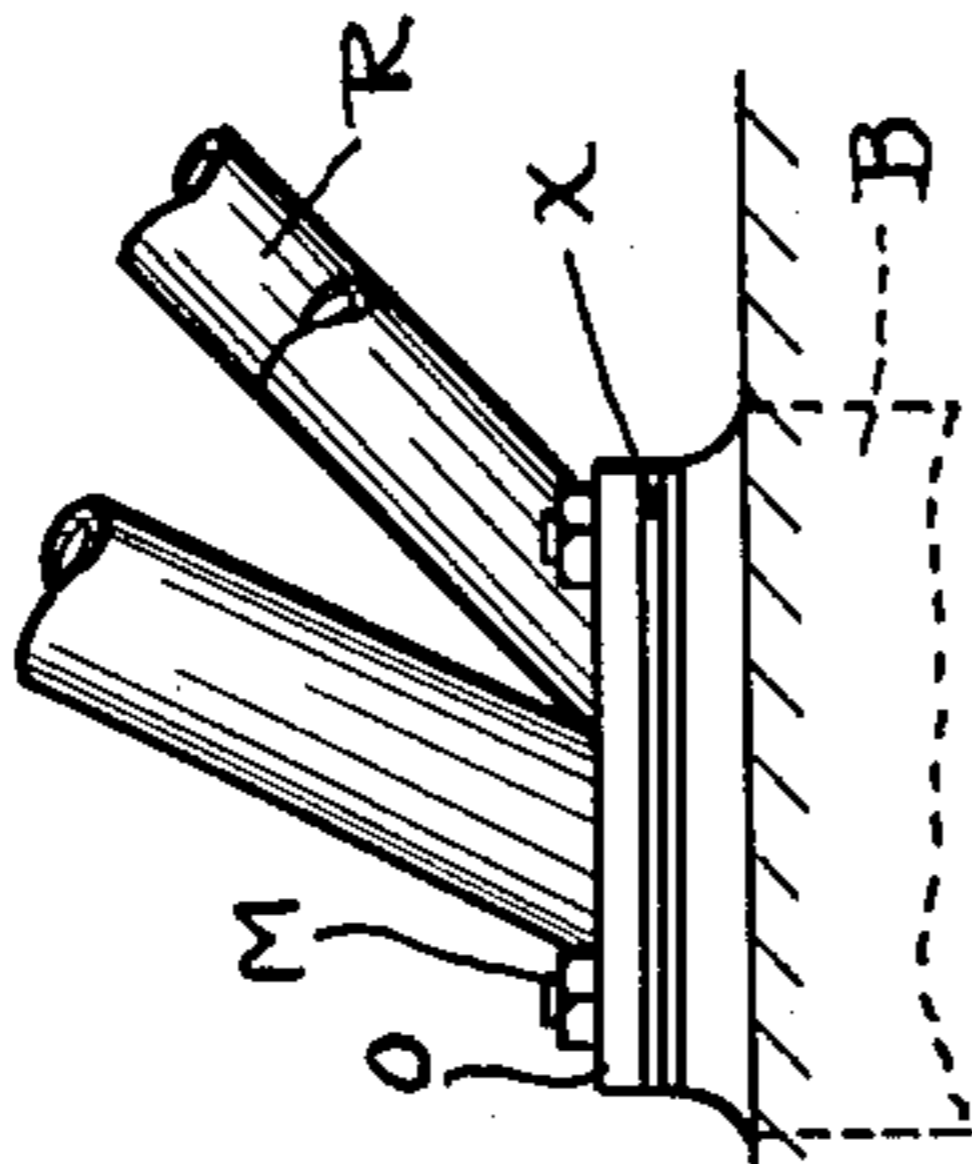


Fig. 7.

Fig. 8.



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3 Sheets-Sheet 2

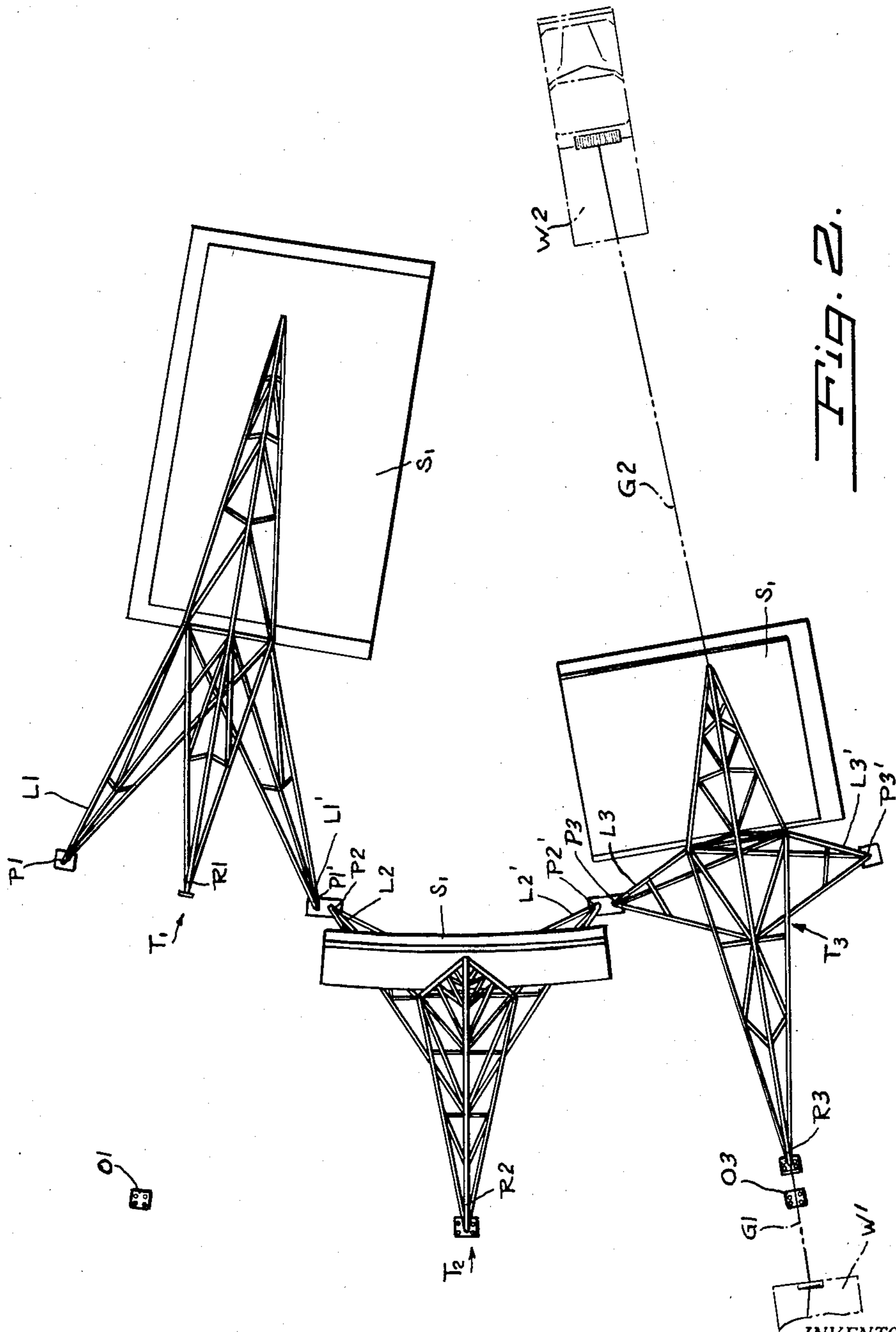


FIG. 2.

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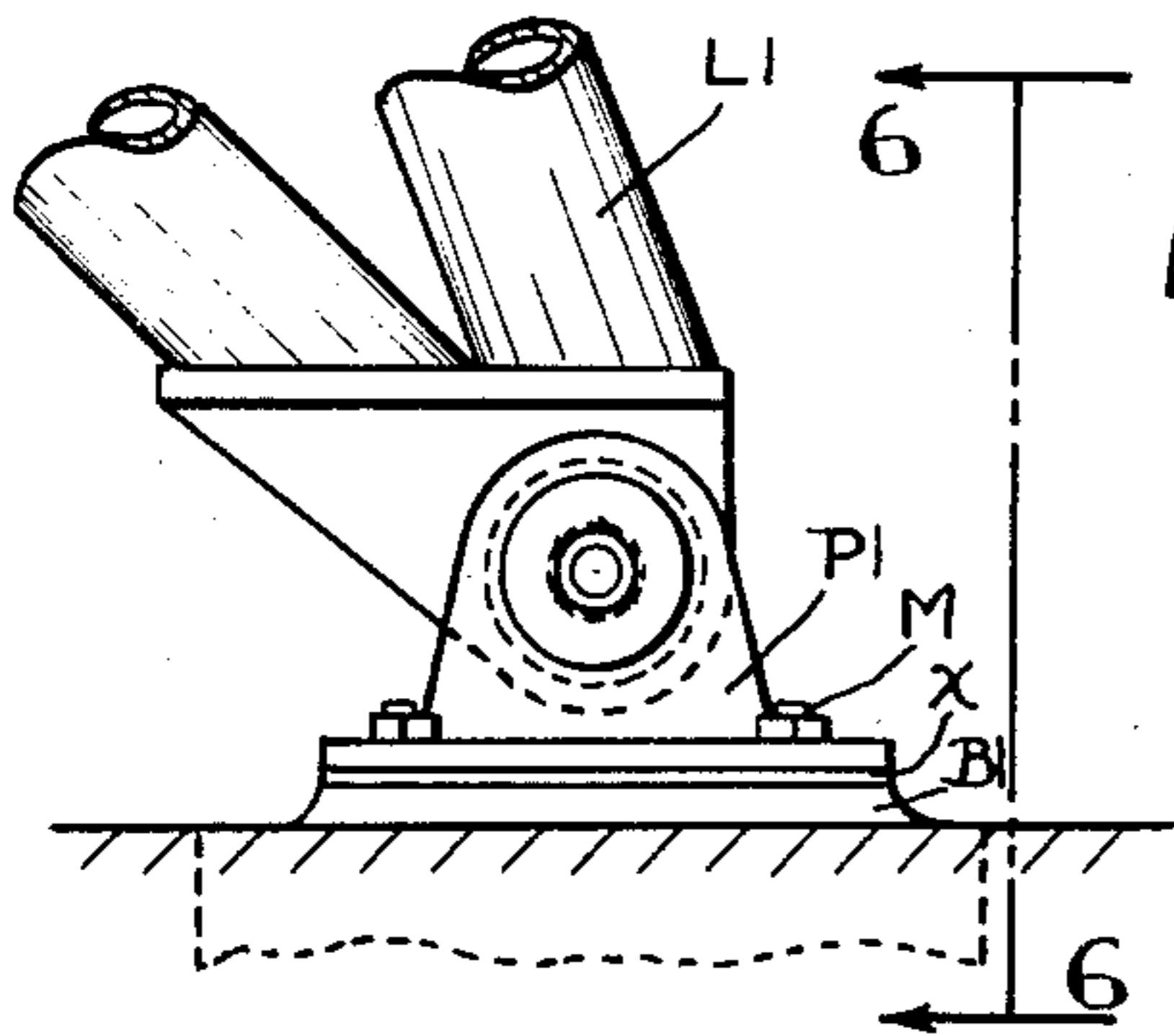


Fig. 5.

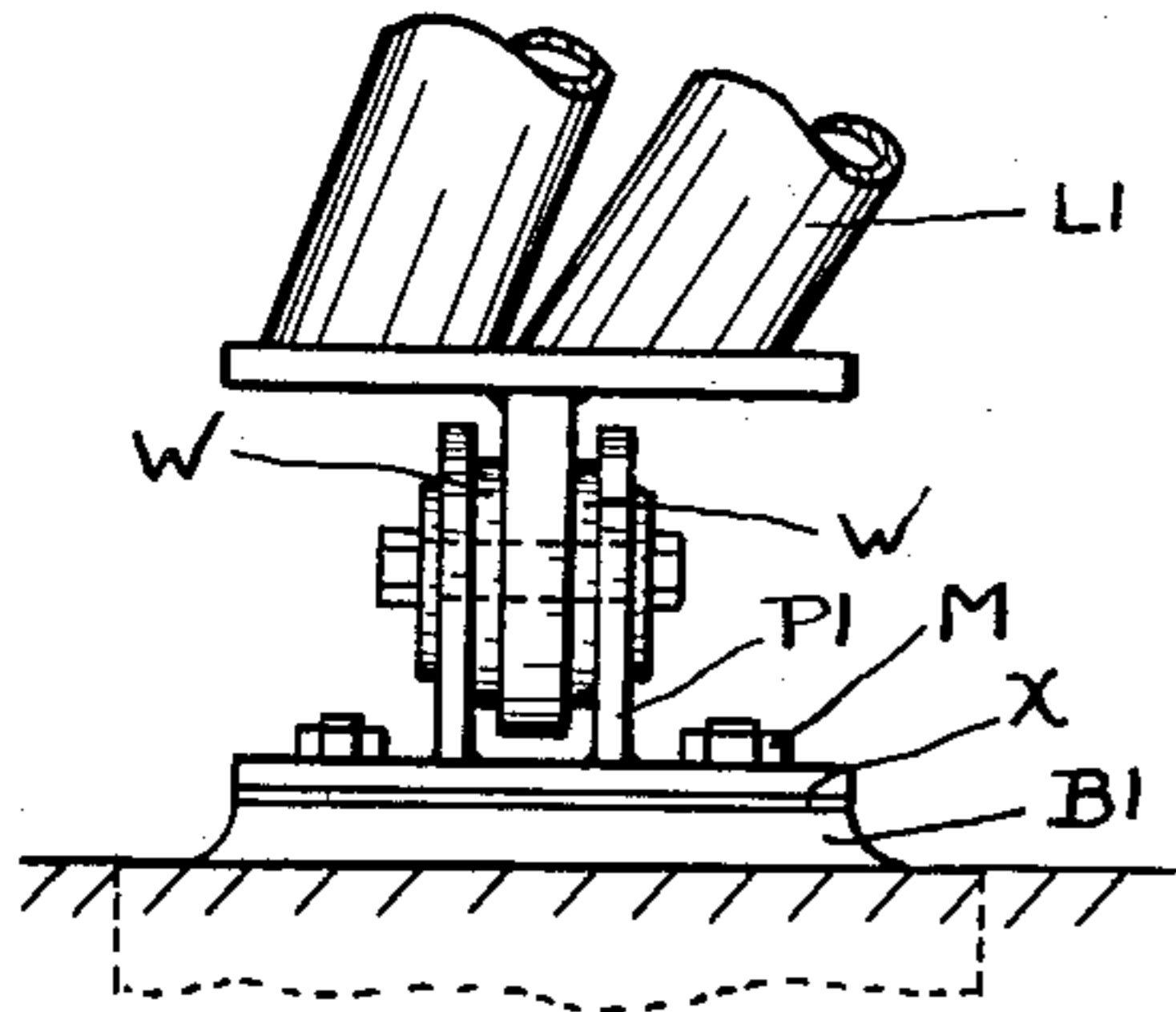


Fig. 6.

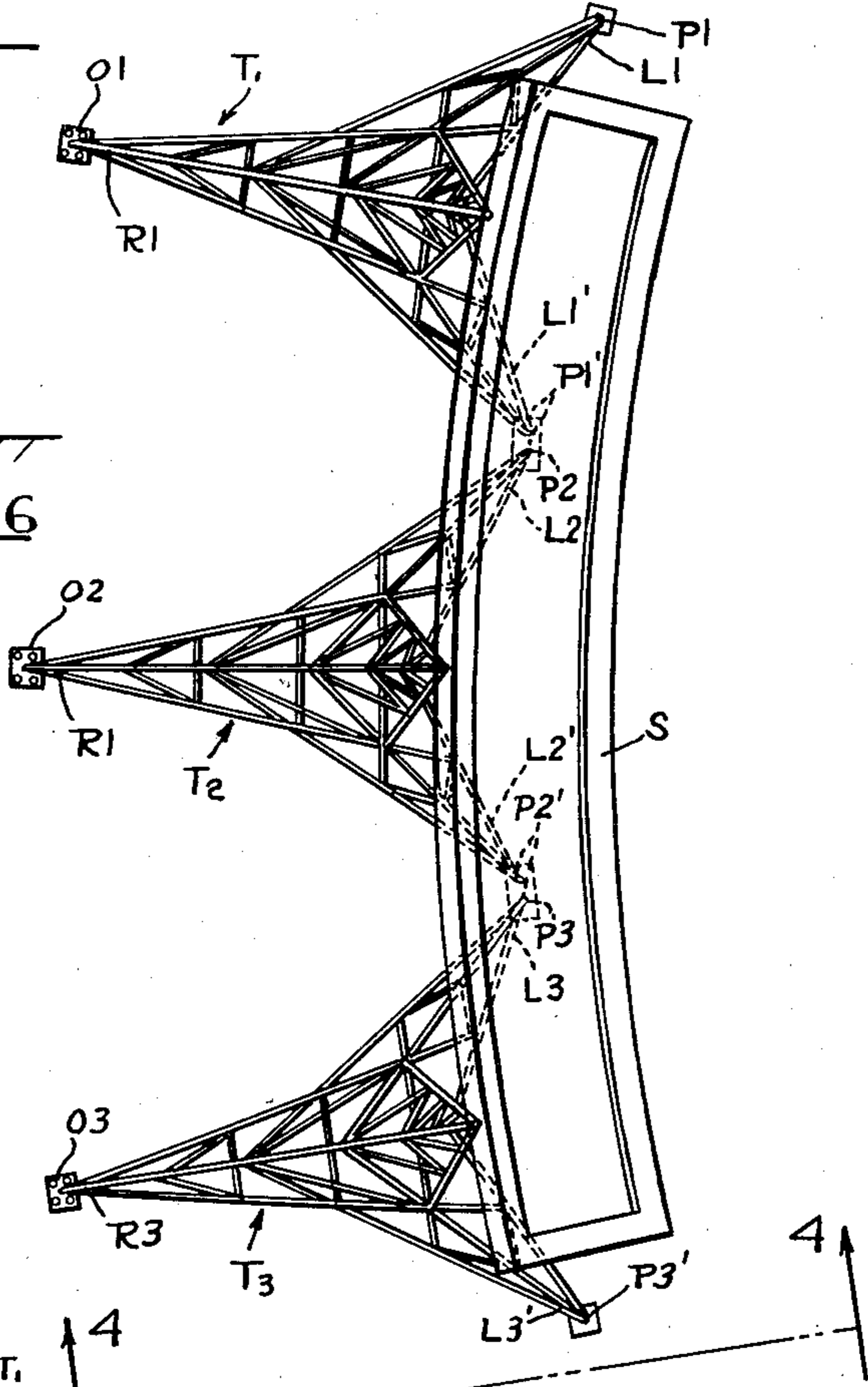


Fig. 3.

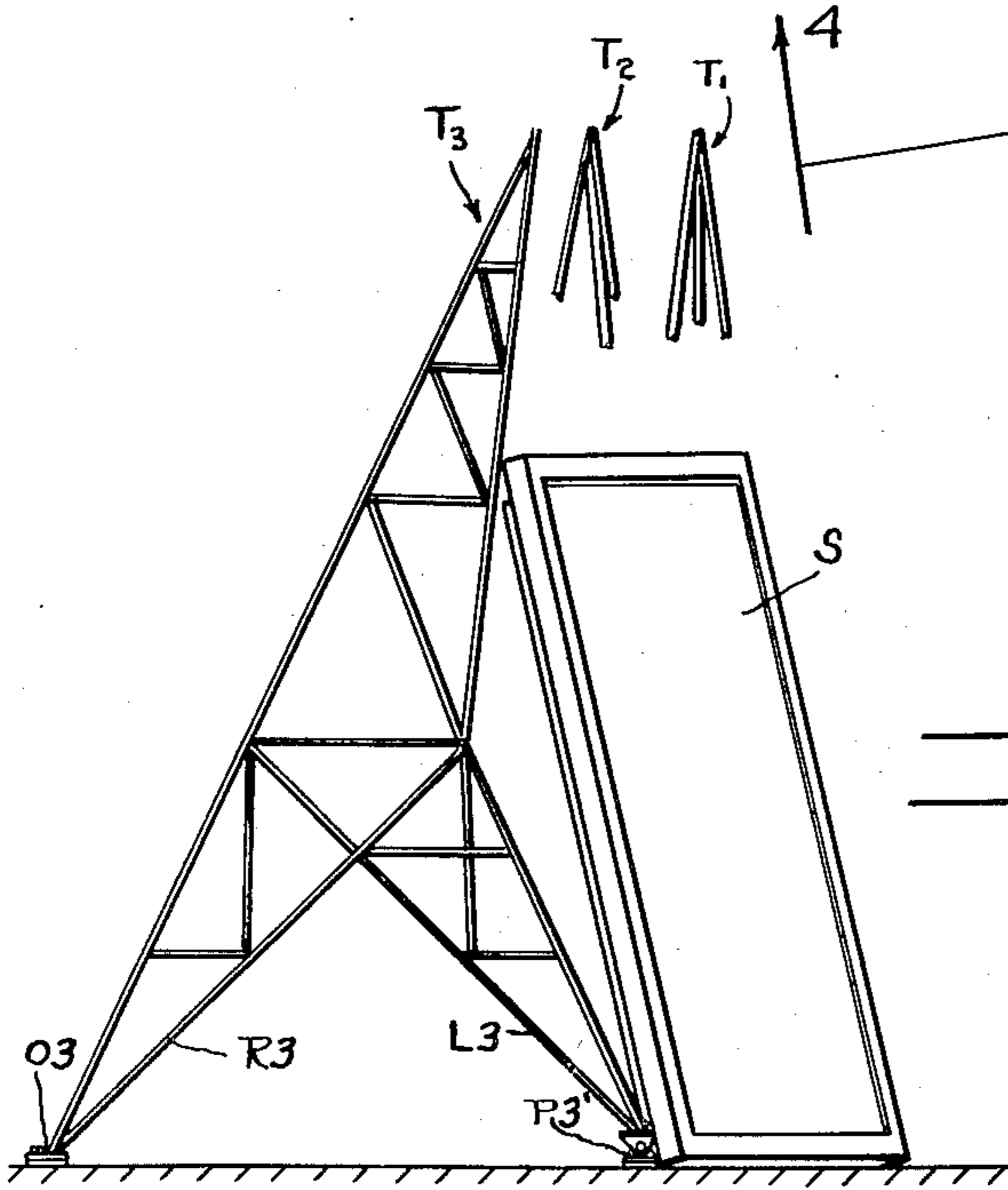


Fig. 4.

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## OUTDOOR PROJECTION SCREEN OR THE LIKE

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Application September 13, 1955, Serial No. 535,898

2 Claims. (Cl. 20—1.12)

This invention relates to new and improved towers and outdoor motion picture projection screens and the like embodying such towers, and to a new and improved method of assembling and erecting the same.

An object of the invention is to provide a structure of the type set forth which is relatively simple and economical in construction and assembly, yet efficient in operation, and to a new and improved method of assembling and erecting such a device, which method is adapted for the simplification of the assembly of such a device and which also facilitates economical mass production of such devices.

Another object is to provide a device of the type set forth and the method of making it whereby the device is principally assembled on the ground and then raised into operative position.

Another object of the invention is to provide a device of the type set forth and the method of assembling and erecting the same whereby the support and projection screen or the like is formed in complete sections on the ground and then the sections pivoted to operative position.

Other objects and advantages of the invention will be apparent from the following description taken in connection with the accompanying drawings. It will be understood that changes may be made in details of construction and arrangement of parts and steps of the process without departing from the scope of the invention as set forth in the accompanying claims.

Referring to the drawings:

Fig. 1 is a side view illustrating one form of the invention and showing the various steps in the method of manufacture and assembly thereof;

Fig. 2 is a top or plan view of the arrangement shown in Fig. 1;

Fig. 3 is a top or plan view of a modified form of the invention and illustrating the method of assembly and erection thereof;

Fig. 4 is a view taken on line 4—4 of Fig. 3, looking in the direction of the arrows;

Fig. 5 is a fragmentary view, on an enlarged scale, of the arrangement shown in Figs. 1 through 4;

Fig. 6 is a view taken on line 6—6 of Fig. 5, looking in the direction of the arrows;

Fig. 7 is another fragmentary view, on an enlarged scale, of another portion of the arrangement shown in Figs. 1 through 4; and

Fig. 8 is a view generally similar to Fig. 6 of the arrangement shown in Fig. 7.

Referring more particularly to the drawings wherein similar reference characters designate corresponding parts throughout, the forms of the invention shown in Figs. 1 through 4 comprise a plurality of towers, preferably of steel, designated generally as T, are formed completely at the assembly plant, or fabricated into large sub-assemblies, not too large for truck transportation, transported to erection site, where the sub-assemblies can be secured into a completed tower by bolting, welding or

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riveting or other suitable means for retaining the sections in assembled relation.

This allows the carrying out of most of the construction work at the factory or assembly plant and results in reduced cost of manufacture and assembly and greater accuracy.

The assembling of the sections of the towers is accomplished in generally horizontal or recumbent position on the ground as described above and tower T1 is shown on the ground in position for assembly. While each of the tower sections is in generally horizontal position on the ground in the position of tower T1 in Fig. 1, a section of the projection screen or billboard, or the like, S1, S2 or S3 as the case may be is attached to the upper portion of towers T1, T2 or T3 by suitable means.

The individual towers T1, T2 and T3 are each provided with a screen section S1, S2, S3 respectively, the sections being attached to the towers in predetermined aligned relation.

The tower sections are each provided with two front legs L1, L1', L2, L2', L3, L3' which are pivotally connected to pivot connections, P1, P1', P2, P2', P3, P3', details of which are shown in Figs. 5 and 6, while the tower is recumbent and the towers are then each raised separately by means of portable winches W1 to raise the top of the tower and W2 to prevent too rapid movement of the tower when the center of gravity passes over the line of the pivots and guy lines G1 and G2 associated with winches W1 and W2 respectively, as shown in Figs. 1 and 2, by pivoting said towers about pivot connections P1, P2, etc. and when the towers have been raised the screen sections S1 are secured together by suitable means to join said sections. Where more than three towers are employed, alternate towers would be raised first. The present arrangement allows for curvature in the screen surface, such a curvature being required for "Panoramic" or "Cinemascope" screens, and the like. The screen or billboard surface may be flat, or may have any desired amount of curvature or be irregular in size and shape.

Preferably, the center tower T2 is raised first and then the adjacent side towers T1 and T3 are raised. The base plate settings on the concrete plinths or bases B as seen at B in Figs. 5 and 6 are the same for all towers and may be adjusted to provide alignment of all of the screen sections by placing shims X beneath the pivot P on base B. Similar base plates O1, O2, O3 are secured to legs R1, R2 and R3. These base plates may also be shimmed as required and spacers W may be positioned on either side of each pivot member P1, P1', P2, P2', P3, P3' for lateral adjustment.

The rear legs R1, R2, R3 of each of the towers is secured to a base prepared therefor and shims similar to shim X may be employed for providing angular or pivotal adjustment of the towers and the bolts M secure the rearward legs R to their respective bases B to secure the towers in aligned relation.

In the form of the invention shown in Figs. 3 and 4, the towers T1, T2 and T3 are assembled in recumbent position on the ground as described in connection with the form shown in Figs. 1 and 2, then each tower is raised and aligned as described, and the screen S raised and secured to all of the towers at the same time by which it is retained in desired position.

Instead of the towers shown, the billboard or projection screen could be supported by a plurality of columns or by towers having other than three legs as shown and described, for example, four legged towers.

While the invention has been described as embodied for use in projection screens, it is understood that it may be utilized in connection with towers for antennas or other purposes and is also adapted for use in billboards and the like.

**Claim:**

1. The method of forming a laterally curved outdoor projection screen, comprising the steps of placing four bases in the ground spaced along a curve corresponding generally to the desired curvature of the screen, placing in the ground three additional bases lying on a curve generally parallel to the curve of the screen, assembling three three-legged towers in recumbent position, mounting a screen section on each of said towers, securing two legs of each of said towers by pivots, at the time of assembly, to adjacent bases of said four bases, pivoting each tower in succession on said pivots by tension means secured to the third leg of said tower to bring said towers into erect position with the third leg of each said tower contacting one of said additional bases, securing said third leg of each said tower to its base, and securing said screen segments together.

2. The method of forming an outdoor projection screen, comprising the steps of placing a plurality of bases in the ground in a first line, and placing a plurality of bases in the ground in a second line, mounting horizontal pivot elements with axes extending generally in the line

of said first line of bases on the bases in said first line, assembling one fewer towers than the number of bases in said first line in a generally horizontal position with two front legs of each tower pivoted to two adjacent bases in said first line, and with at least one rear leg extending substantially upwardly, securing a section of the screen to the lower side of each tower in face down position, pivoting said towers one at a time by tension means secured to said upwardly extending rear leg to bring said towers into erect position with said rear legs each in contact with one base of said second line of bases, securing said rear legs to said bases, and securing the edges of the sections of said screen together.

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