

May 17, 1932.

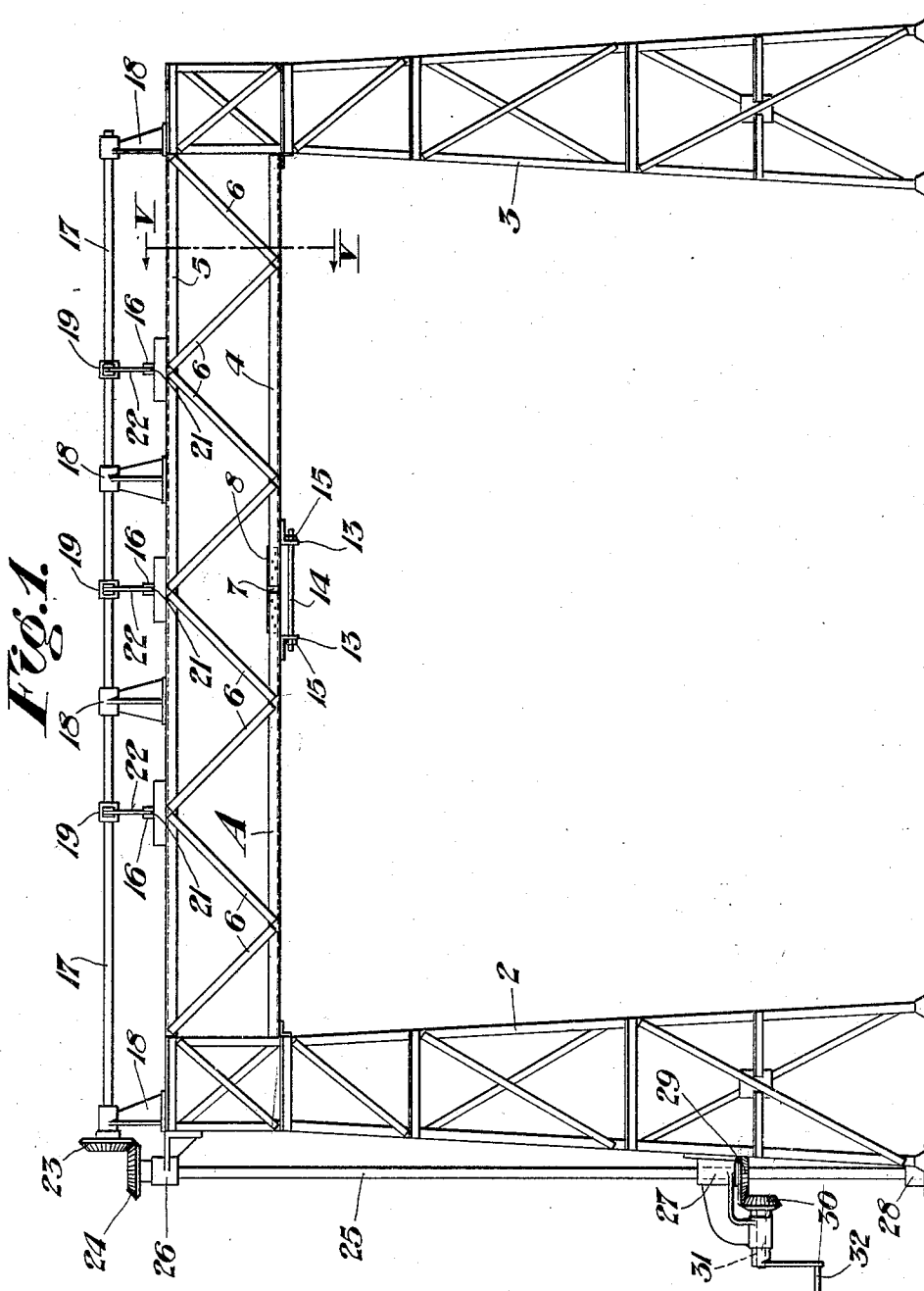
C. M. GOODRICH

1,859,136

TRUSS

Filed Nov. 4, 1930

2 Sheets-Sheet 1



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*Fig. 2.*

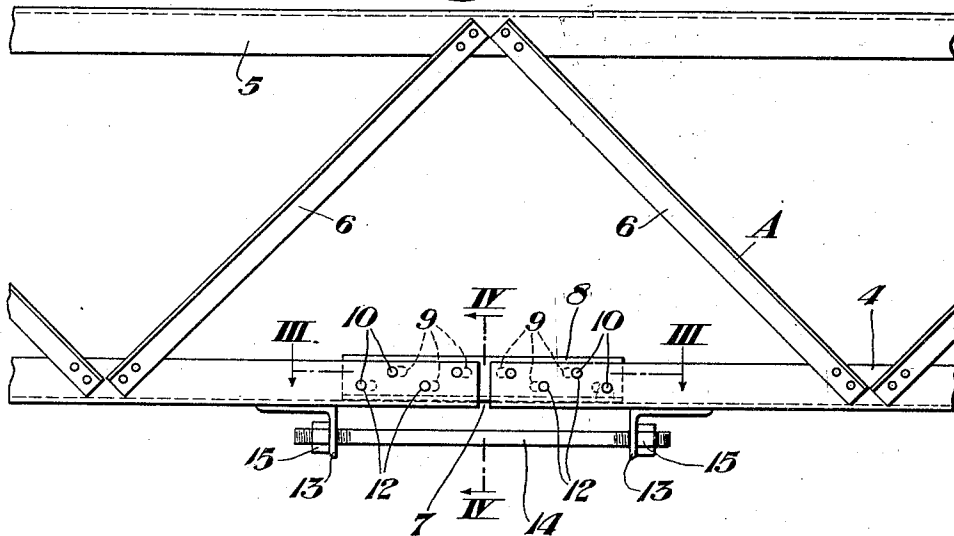


*Fig. 3.*

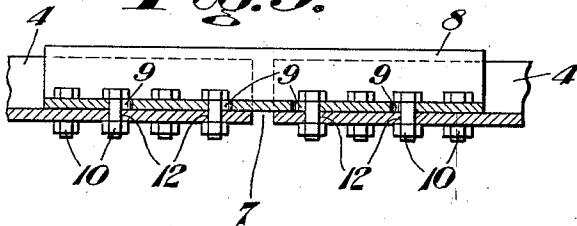


*Fig. 4.*

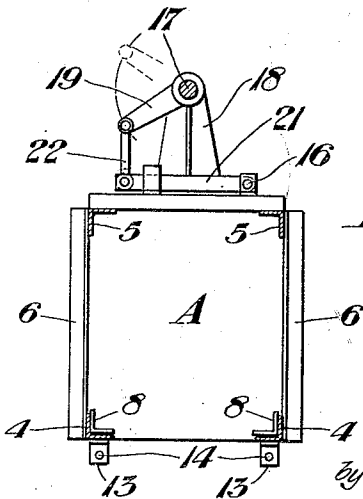
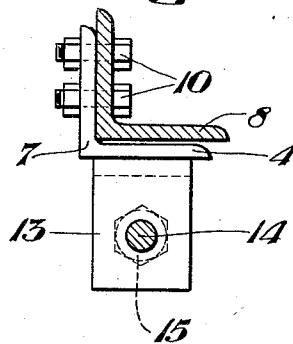


*Fig. 5.*

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## UNITED STATES PATENT OFFICE

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## TRUSS

Application filed November 4, 1930. Serial No. 493,400.

This invention relates to girder supports or trusses for switching stations and the like and has for its object the provision of an adjustable girder or truss so constructed that its camber may be readily adjusted after it is mounted in operative position.

Outdoor switching stations usually consist of a number of columns with horizontal girders at their tops. On the top of these girders are placed switches which are adapted to be opened and closed by a single continuous shaft. It is of utmost importance that girders or trusses be as nearly level as possible so that the switches will operate satisfactorily and the operating shaft will not jam or operate with difficulty.

In the drawings:

Figure 1 is an elevation of a switching station constructed in accordance with this invention.

Figure 2 is an enlarged fragmentary elevation of the truss, showing the camber adjusting means.

Figure 3 is a sectional view taken on the line III—III of Figure 2.

Figure 4 is a sectional view taken on the line IV—IV of Figure 2.

Figure 5 is a transverse section through the truss, taken on the line V—V of Figure 1.

Referring more particularly to the drawings the numerals 2 and 3 designate the columns which may be of any well known construction or design and serve to support the truss girder A.

The girder A consists of four rolled metal flange members 4 and 5, preferably of angle shape, arranged to form bottom and top chord members and suitably connected by diagonals 6.

The bottom chords 4 are shown divided at their center, as at 7, and connected by a splice piece 8. The splice 8 has elongated holes 9 to receive bolts 10 which pass through holes 12 in the chord members 4. The elongated holes 9 permit a limited movement of the sections of the bottom chord members toward or away from each other to thereby adjust the camber of the girder truss A.

Angle brackets 13 are secured to each of the chord sections at opposite sides of the

dividing point 7 and are connected by a bolt 14 having nuts 15 on each end adapted to be threaded on or off the bolt to lengthen or shorten the chords as desired.

It will, of course, be understood that while I have shown the bottom chords as divided and adjustable at only one point, I do not wish to be limited thereto since two or more of such points may be provided if desired.

A plurality of switches 16 are mounted on the top of the girder A. A common form of blade switch is shown in the drawings for purpose of illustration, and it will be understood that any other well known or special form of switch may be substituted in practice and the operating mechanism may be varied accordingly.

A switch operating shaft 17 extends lengthwise of the girder A and is journaled in bearing brackets 18. A plurality of switch operating arms 19 are keyed or otherwise secured to the shaft 18 and are connected to the blades 21 of the switches 16 by links 22 so that rotation or rocking of the shaft 17 will open and close the switches.

A gear 23 is keyed on one end of the shaft 17 and meshes with a gear 24 on the upper end of a vertical operating shaft 25 which is journaled in a bearing bracket 26 and bearings 27 and 28. A gear 29 is keyed on the shaft 25 adjacent its lower end and meshes with a gear 30 carried by a shaft 31 operated by a hand-crank 32.

The above arrangement of operating mechanism for the switches 16 is only illustrative and may be varied to suit the existing conditions and requirements of the specific installations.

It will be readily appreciated that in long span truss girders a certain amount of sag is inevitable and is generally allowed for by building a certain predetermined camber in the girder. Even with a predetermined camber built into the girders they often sag after installation to a greater extent than allowed for by the camber and, in such cases, the operation of the switch actuating mechanism and the switches themselves are made difficult and faulty.

The adjustable splice in the bottom chords

4 of the present structure allows for shortening or lengthening of the bottom chords 4 to adjust the camber of the girder and maintain it level so that the switches 16 and shaft 17 can be maintained in accurate alinement.

It will be understood that the camber of the truss will be generally adjusted during erection and assembly of the switches 16 and their operating mechanism so as to prevent the truss sagging below the horizontal. If, however, the truss sags below the horizontal, due to its relatively light structure, it can generally be brought back by screwing up the nuts 15 on the bolt 14, since the pull on the bottom chord parts is delivered through the adjacent diagonals 6 to a point at the center of the top chord members 5. In case the truss girder is of such size and weight that it can not be returned to the desired position by the bolt 14 and nuts 15, a suitable prop may be forced under it at or adjacent its center to return the girder to the desired position, and the nuts 15 may then be threaded on the bolt to hold the truss in position.

While I have shown and described a certain specific embodiment of my invention, it will be understood that I do not wish to be limited thereto since various modifications in the general design and details of structure may be made without departing from the scope of my invention, as defined in the appended claim.

I claim:

A truss having bottom and top chord members secured together by diagonal bracing, at least two of said diagonal bracing members being secured to said top chord member at the center of said chord member and to spaced points on said bottom chord member, said bottom chord member being divided to form two parts at a point immediately below the point of connection of said diagonal bracing members with said top chord member, a splice member bridging and connecting the parts of said bottom chord member, means for adjustably securing the parts of said bottom chord member and said splice member together, said means including bolts passing through close fitting holes in said bottom chord member and elongated holes in said splice member, lugs on each of the parts of said bottom chord member and a threaded bolt connecting said lugs and having nuts adapted to be threaded on and off the bolt to force the parts of said chord member toward each other or permit said parts to move away from each other to adjust the camber of said truss.

In testimony whereof, I have hereunto set my hand.

CHAUNCEY M. GOODRICH.