

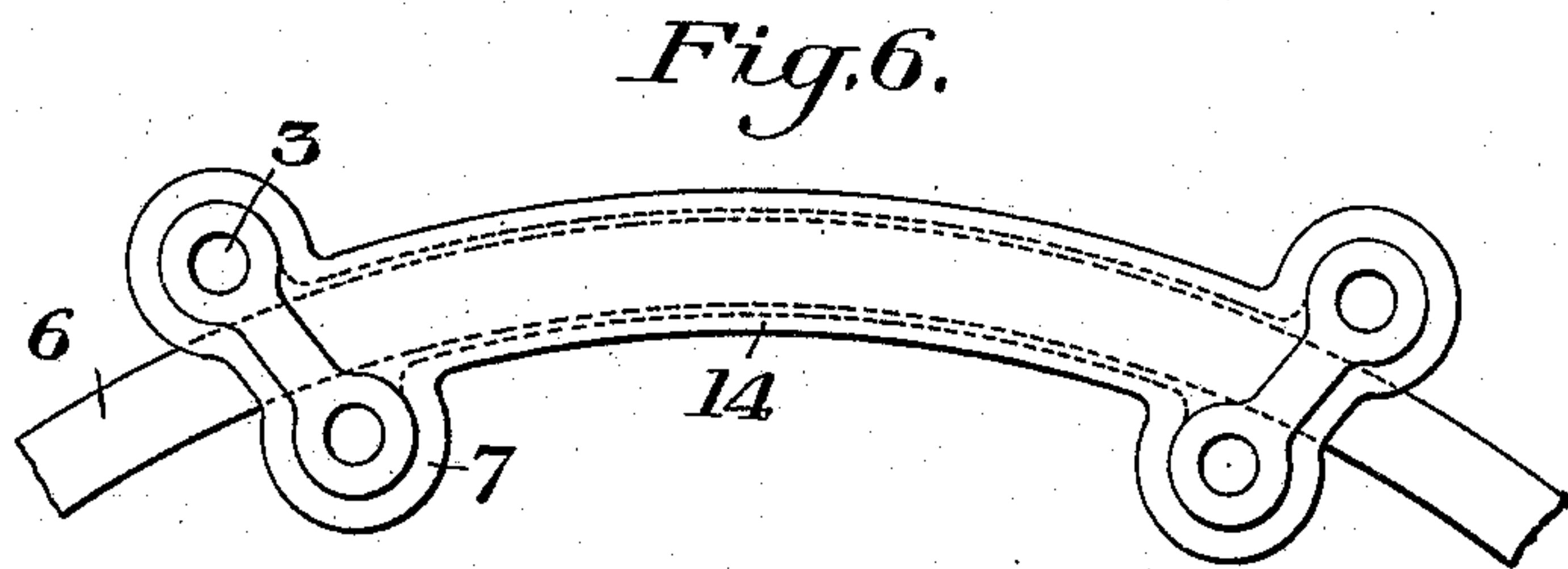
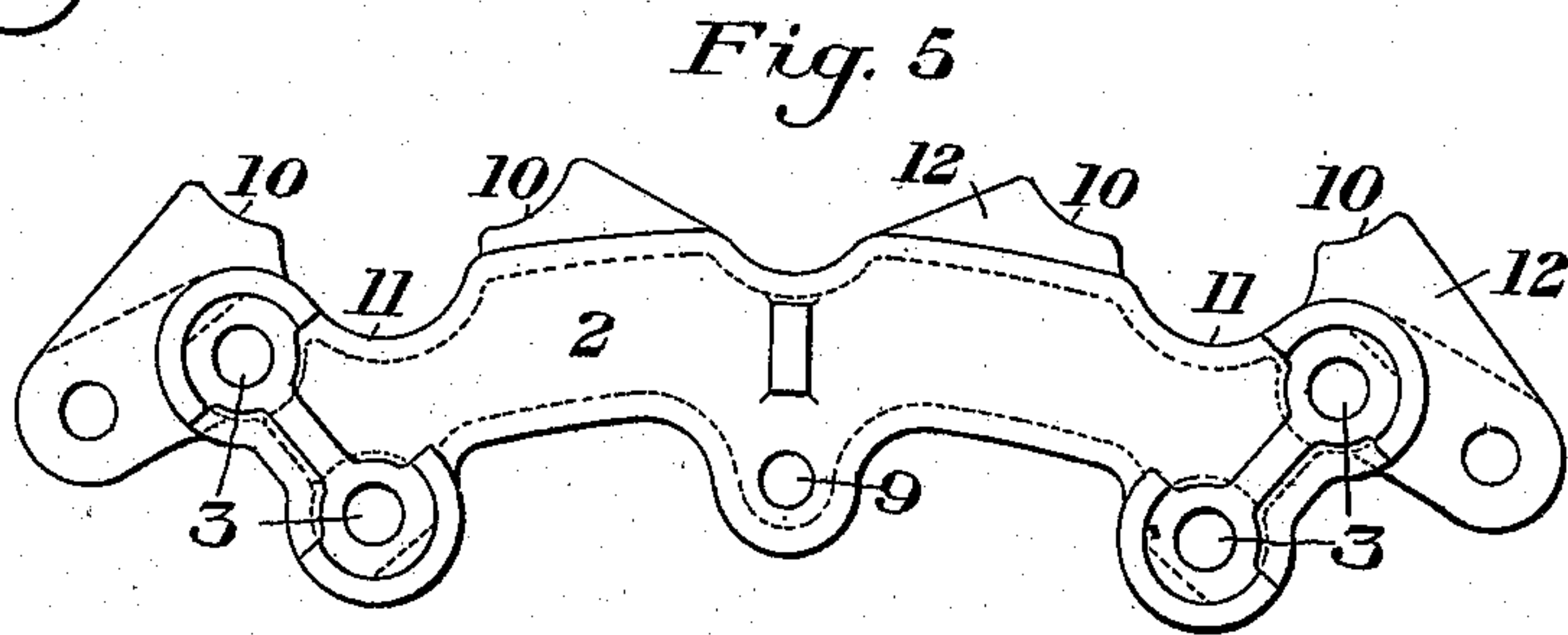
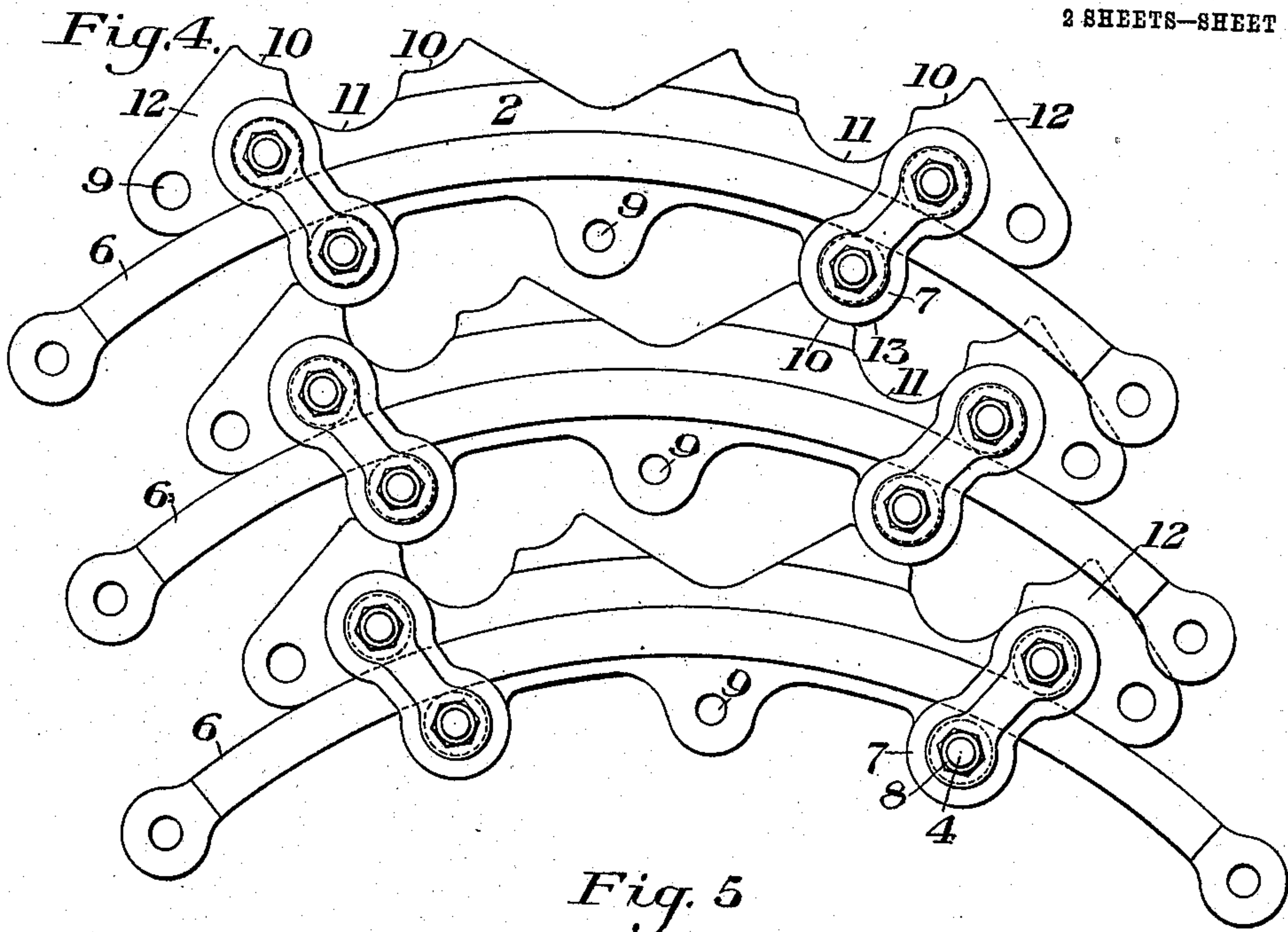
WITNESSES

*R. A. Balderson*  
*W. W. Swartz*

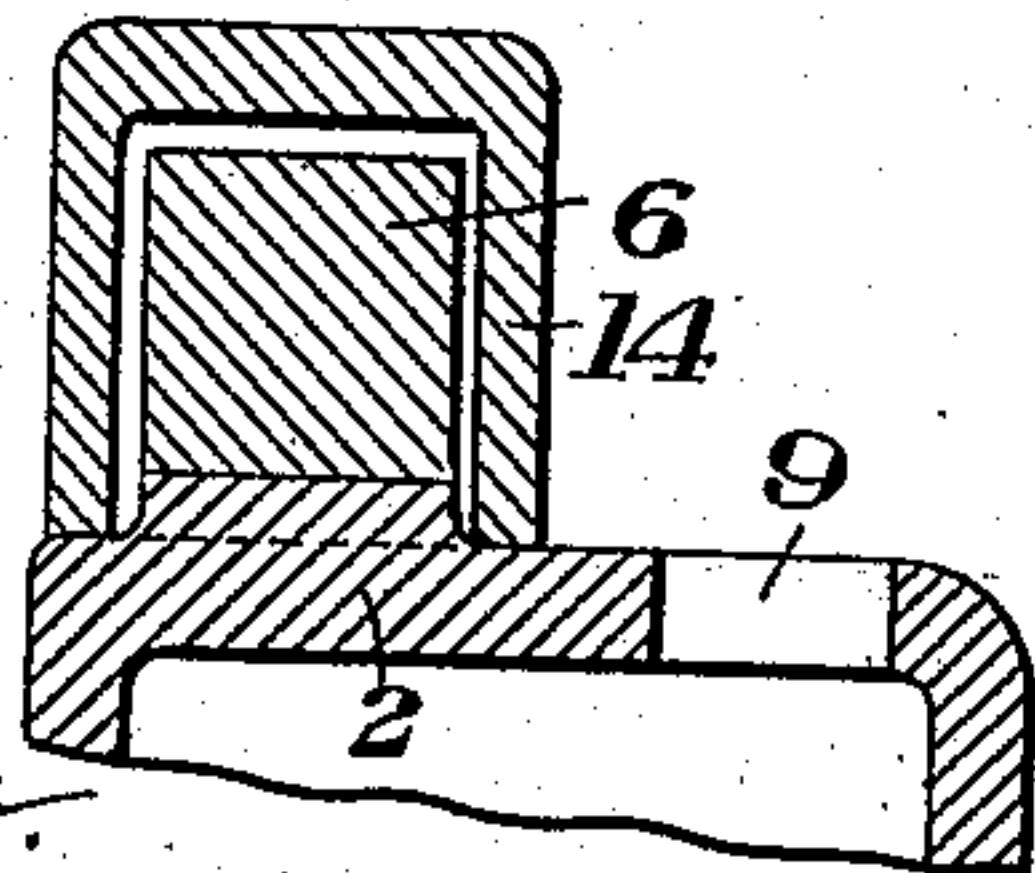
INVENTOR

*W. E. Foster,*  
*by Balderson, Rymus & Pammel,*  
*his Attys.*

W. E. FOSTER.  
 MULTIPLE UNIT DEFLECTING BAR STAND FOR SWITCH AND SIGNAL OPERATING LINES.  
 911,003.  
 APPLICATION FILED JULY 31, 1908.  
 Patented Jan. 26, 1909.  
 2 SHEETS—SHEET 2.



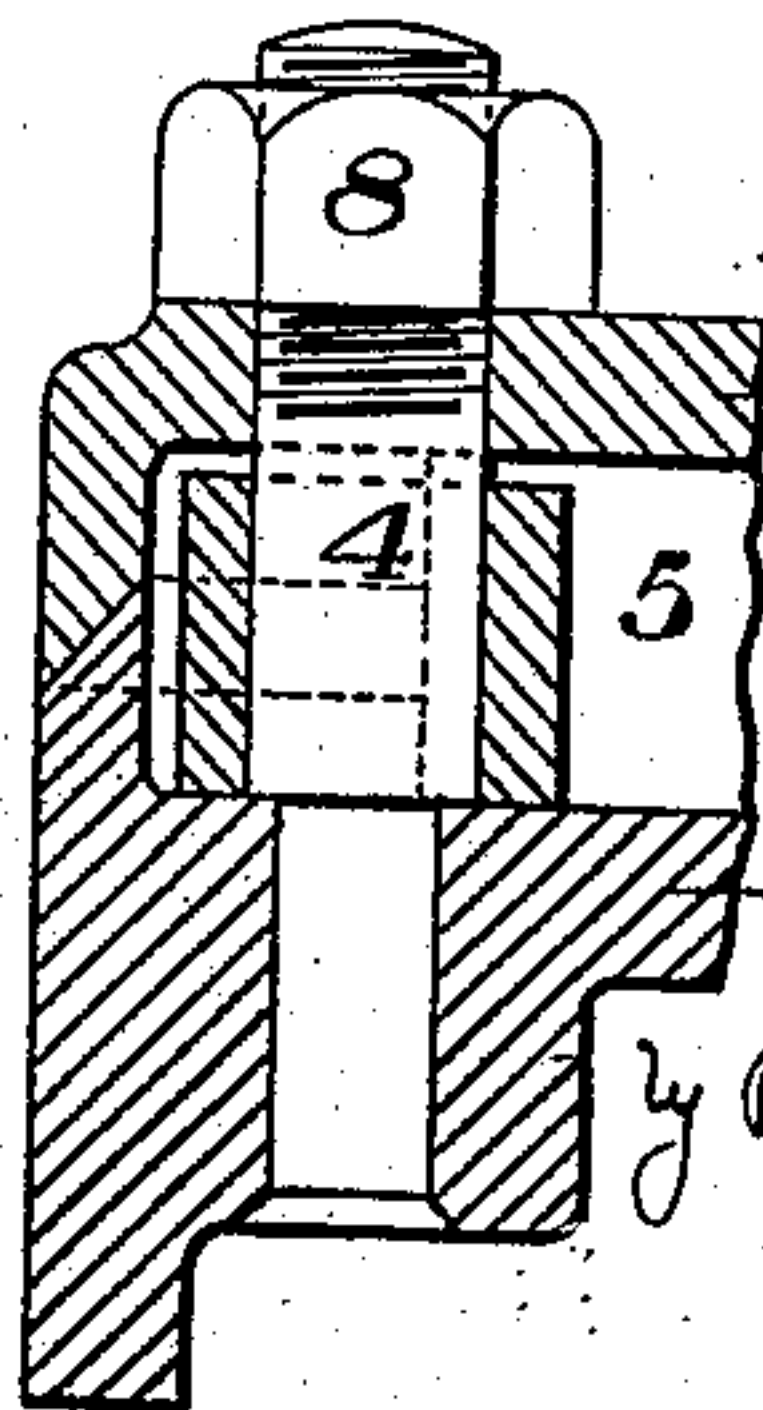
*Fig. 7.*



WITNESSES

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*Fig. 8.*



INVENTOR

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# UNITED STATES PATENT OFFICE.

WALTER E. FOSTER, OF EDGEWOOD PARK, PENNSYLVANIA, ASSIGNOR TO THE UNION SWITCH & SIGNAL COMPANY, OF SWISSVALE, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## MULTIPLE-UNIT DEFLECTING-BAR STAND FOR SWITCH AND SIGNAL OPERATING LINES.

No. 911,003.

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed July 31, 1903. Serial No. 446,284.

*To all whom it may concern:*

Be it known that I, WALTER E. FOSTER, of Edgewood Park, Allegheny county, Pennsylvania, have invented a new and useful Multiple-Unit Deflecting-Bar Stand for Switch and Signal Operating Lines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figures 1, 2 and 4 are plan views showing different relative positions of the stands; Fig. 3 is a section on the line III—III of Fig. 2; Fig. 5 is a plan view of one of the base members; Fig. 6 is a detail view showing a modification; Fig. 7 is a cross-section of Fig. 6; and Fig. 8 is a detail view of a further modification.

My invention has relation to multiple unit deflecting bar stands for switch and signal operating pipe lines or rods, and is designed to provide a stand of this character which can be used for making angular bends or turns in the pipes or rods, both where the centers of the pipes are the same before and after turning, and also where the centers change.

A further object of the invention is to provide a simple stand of this character having roller bearings for the deflector bars, and which can be used reversibly or interchangeably for both right and left-hand bends.

An important feature of my invention consists in the provision of stands of this character having each a plurality of bearing points adapted to contact with bearing points of an adjacent similar stand in different relative positions of the two stands, thereby spacing and setting the stands in their proper position.

The precise nature of my invention will be best understood by reference to the accompanying drawings, in which I have shown one embodiment thereof, it being premised, however, that the invention is susceptible of various other embodiments and that its design may be widely departed from in form without departing from the spirit and scope of my invention as defined in the appended claims.

In these drawings, the numeral 2 designates a number of adjacent stands embodying my invention, and consisting each of a curved bar or base, which may be conveniently formed as an integral casing, and which is

provided at different points in its length with bolt holes 3, in which are placed vertical bolts 4, upon which are mounted the bearing rollers 5 for the deflector bars 6. Instead, however, of employing separate bolts seated in the base in the manner described, it is obvious that studs projecting upwardly from the base may be employed, as shown in Fig. 8. These bolts are arranged in pairs, and are connected at their upper ends by the caps or housings 7 secured by nuts 8 on the bolts. The base is also provided with suitable means such as bolt holes 9, by which it may be secured to its seat on a suitable foundation. In the particular design shown in the drawing, I have shown each of the stands as having two pairs of bearing rollers 5 located on opposite sides of the center of the base. Each base 2 is formed on its convex edge with a plurality of bearing surfaces 10 and 11, the bearing surfaces 10 being on the projections 12 and the bearing surfaces 11 being intermediate of said projections. At its opposite edge the base is provided with the convex bearing surfaces 13 adapted to engage the bearing surfaces 10 and 11 of an adjacent stand.

In use, a plurality of these stands, one for each operating pipe or rod, are placed side by side, as shown in Figs. 1 and 2 with the deflector bars connecting the ends of the pipes or rods extending between the bars or bearing rollers. Where the distance between the centers of the pipes or rods is the same at both sides of the turn or bend, the stands are arranged as shown in Fig. 1, the convex bearing surfaces 13 of one base engaging the concave bearing surfaces 11 of the adjacent stand, thus forming and acting as spacers to hold the stands in parallel position. Where the distance between the centers of the pipes or rods is different at one side of the bend or turn than at the other, as shown in Fig. 2, the stands are placed as also shown in that figure, so that the convex bearing surfaces 13 of one bar rest in the concave bearing surfaces 10 of the adjacent bar.

Fig. 2 shows the relative positions of the stands where the distance between the centers is less at one side of the turn or bend than at the other, while Fig. 4 shows their arrangement when the distance between centers decreases at the opposite side of the



turn or bend. From these two figures, compared with Fig. 1 it will be seen that where-  
as in the parallel relation of the stands as  
shown in the last named figure, the convex  
5 bearing surfaces 13 of one stand engage with  
the concave bearing surfaces 11 of the other  
stand intermediate its projections 12, when  
the stands are used with a change in centers,  
the bearing surfaces 13 will engage the bear-  
10 ing surfaces 10 at one side or the other of the  
bearing surfaces 11, depending upon which  
side of the stand the decrease in centers oc-  
curs. It will be seen that in this manner the  
stands are adapted for universal use, since  
15 the distance between centers of the pipes or  
rods is, in practice, made according to fixed  
standards, only two different spacings being  
used. The cooperating bearing surfaces of  
the stands act in all the different positions  
20 thereof to properly space and set the stands  
in their correct positions, so that after the  
first stand has been set the others can be  
readily and quickly set from it.

If desired, the caps or housings 7 for the  
25 bearing rollers of each stand may be connect-  
ed by a flanged housing 14. It will also be  
noted that the stands may be used in either  
right or left position.

It will be understood that the particular  
30 form or design of stand which I have herein  
shown and described, is illustrative only, it  
being obvious that various forms or designs  
may be made which will operate in the man-  
ner described. I do not, therefore, desire to  
35 limit myself to this particular form or design,  
since I believe that I am the first to provide a  
stand which is capable of universal use in the  
manner described.

I claim:—

40 1. A deflecting bar stand having bearings  
for a deflector bar, and provided with a plu-  
rality of bearing portions or surfaces adapted  
to contact with bearing portions or surfaces  
of an adjacent similar stand in different rela-

tive positions of the two stands; substan- 45  
tially as described.

2. A deflecting bar stand comprising a  
base having roller bearings mounted thereon  
for a deflector bar, and having a plurality of  
lateral bearing portions or surfaces adapted 50  
to engage the corresponding bearing por-  
tions or surfaces of an adjacent stand in dif-  
ferent relative positions of the two stands;  
substantially as described.

3. A deflecting bar stand having a plural- 55  
ity of bearing rollers mounted thereon for the  
deflecting bar, said stand having its base por-  
tion provided at one side with a plurality of  
bearing projections, and at its other side  
with a plurality of bearing projections and 60  
intermediate depressions also forming bear-  
ing surfaces; substantially as described.

4. A deflecting bar stand comprising a  
curved base, a plurality of bearing rollers  
mounted thereon, and caps or housings for 65  
said rollers, said base having a plurality of  
bearing surfaces adapted to cooperate with  
the bearing surfaces of adjacent similar  
stands to space said stands in different rela-  
tive positions; substantially as described. 70

5. A deflecting bar stand having spacing  
projections adapted to engage corresponding  
portions of adjacent stands to thereby space  
such stands either in a position of parallelism,  
or at an angle to each other; substantially as 75  
described.

6. A multiple unit deflecting bar stand,  
comprising a plurality of separate stands,  
each of which is provided with bearing rollers,  
and which is adapted to have bearing con- 80  
tact with adjacent stands in three different  
positions thereof; substantially as described.

In testimony whereof, I have hereunto set  
my hand.

WALTER E. FOSTER.

Witnesses:

L. FREDERIC HOWARD,  
M. KRISSINGER.