

936,342.

Patented Oct. 12, 1909.
2 SHEETS—SHEET 1.

Fig. 1.

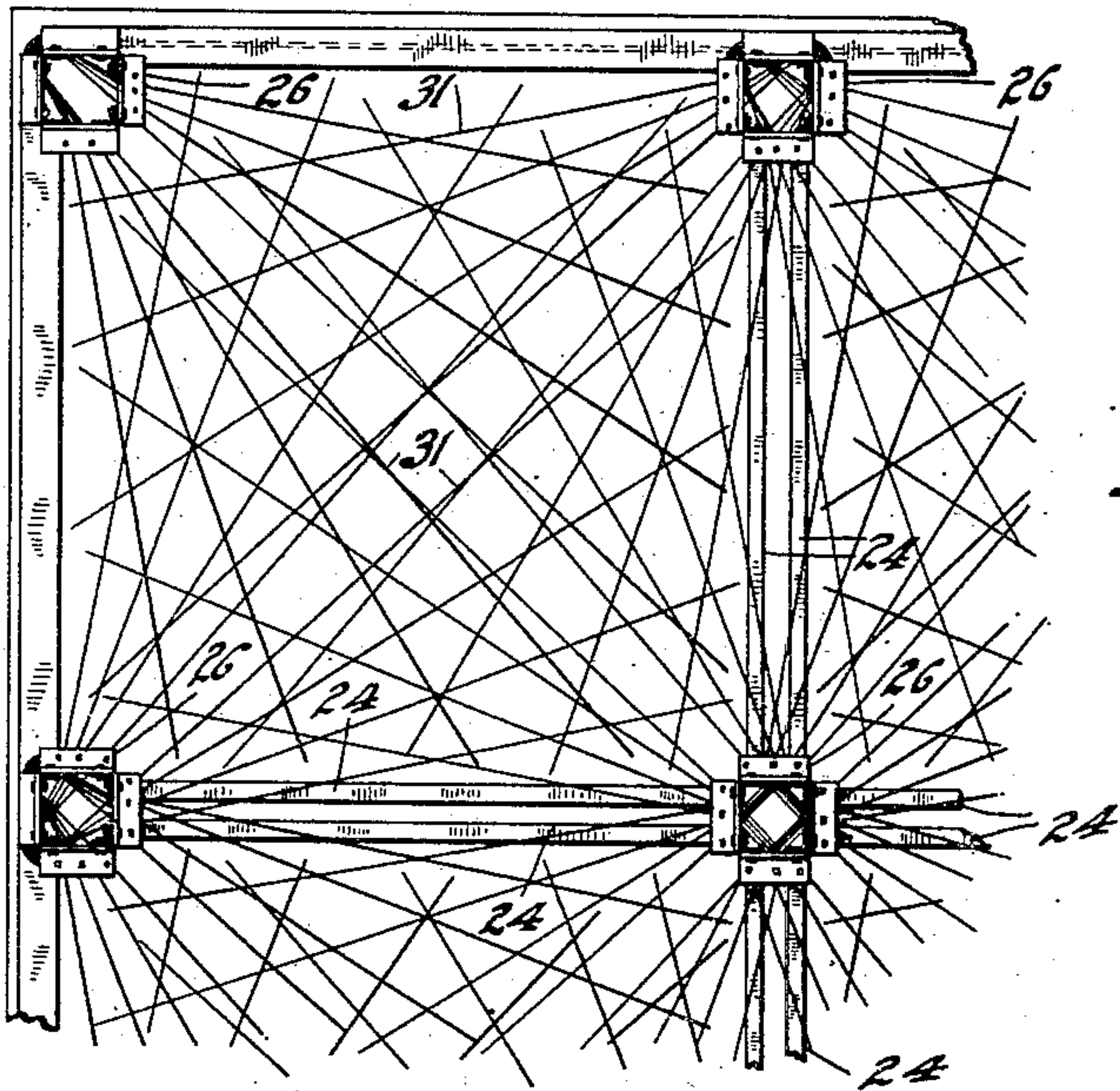


Fig. 2.

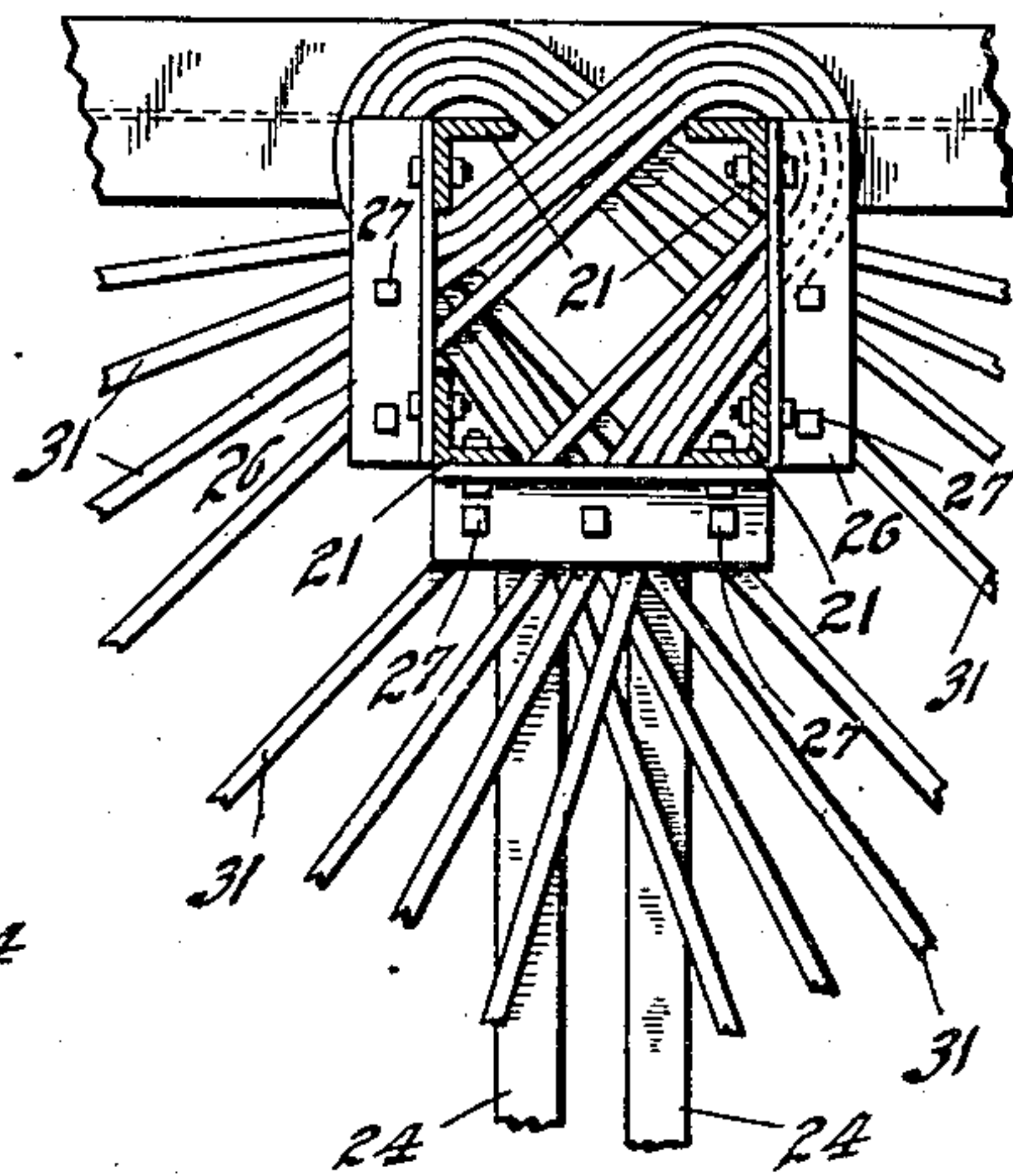


Fig. 4.

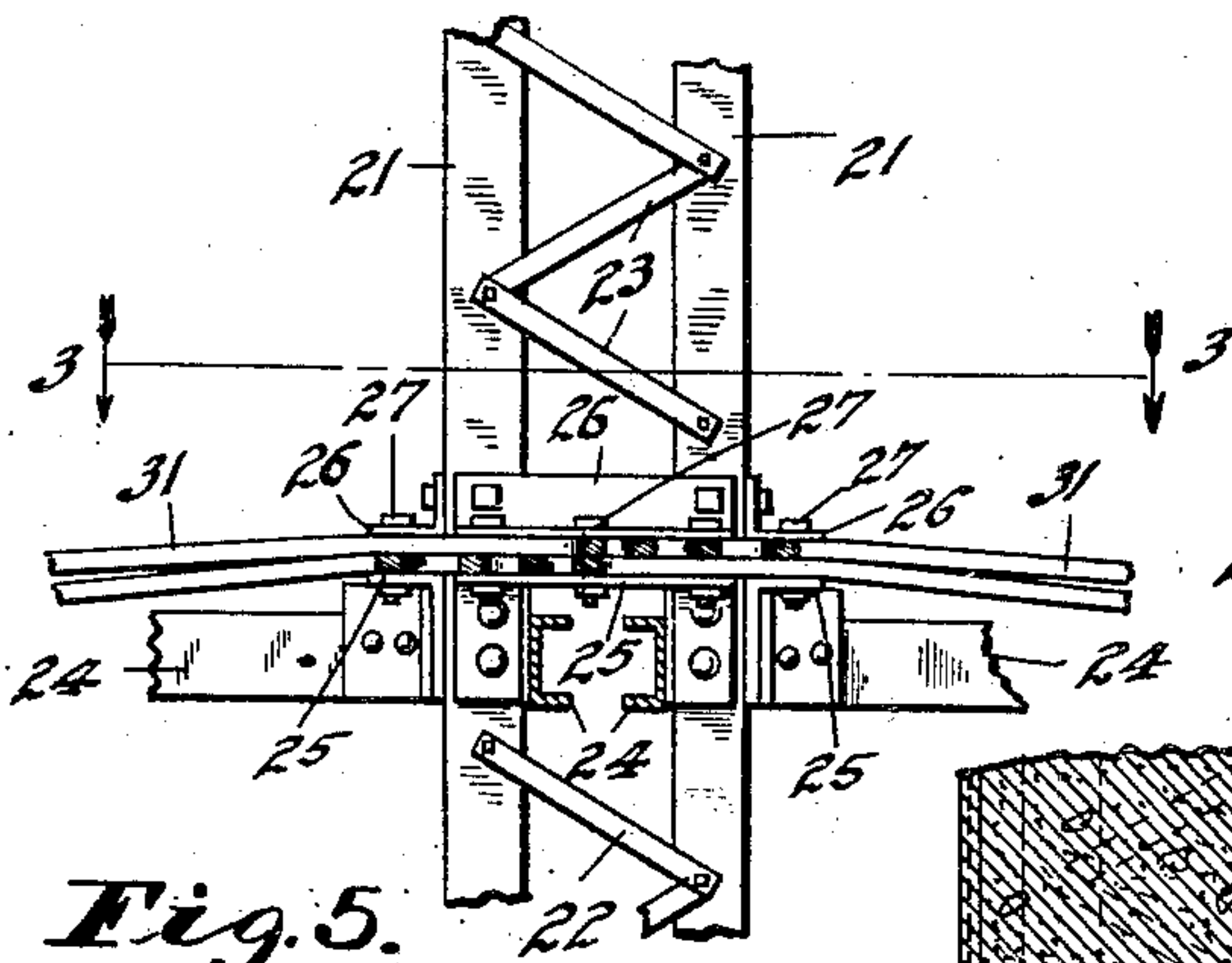


Fig. 3.

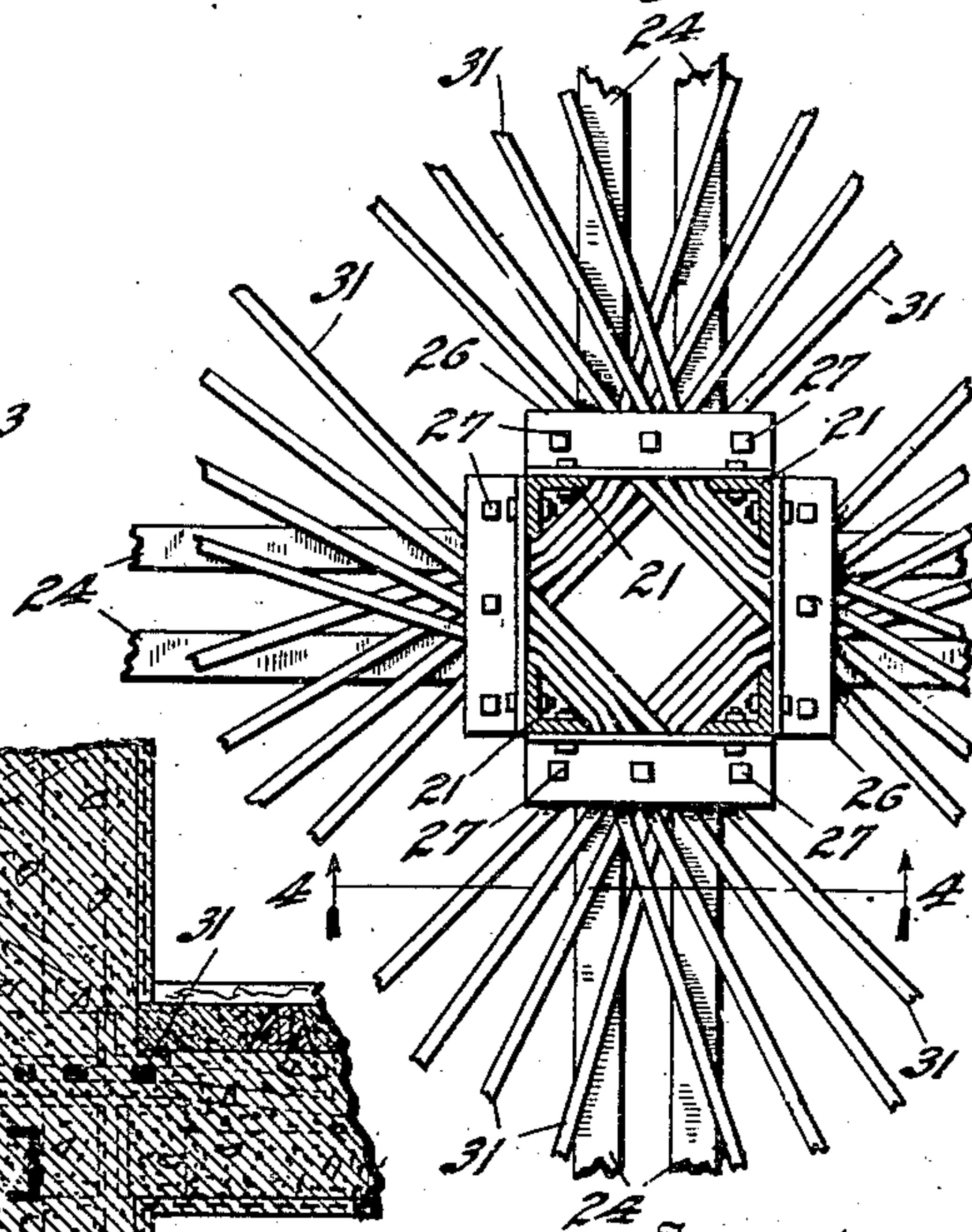
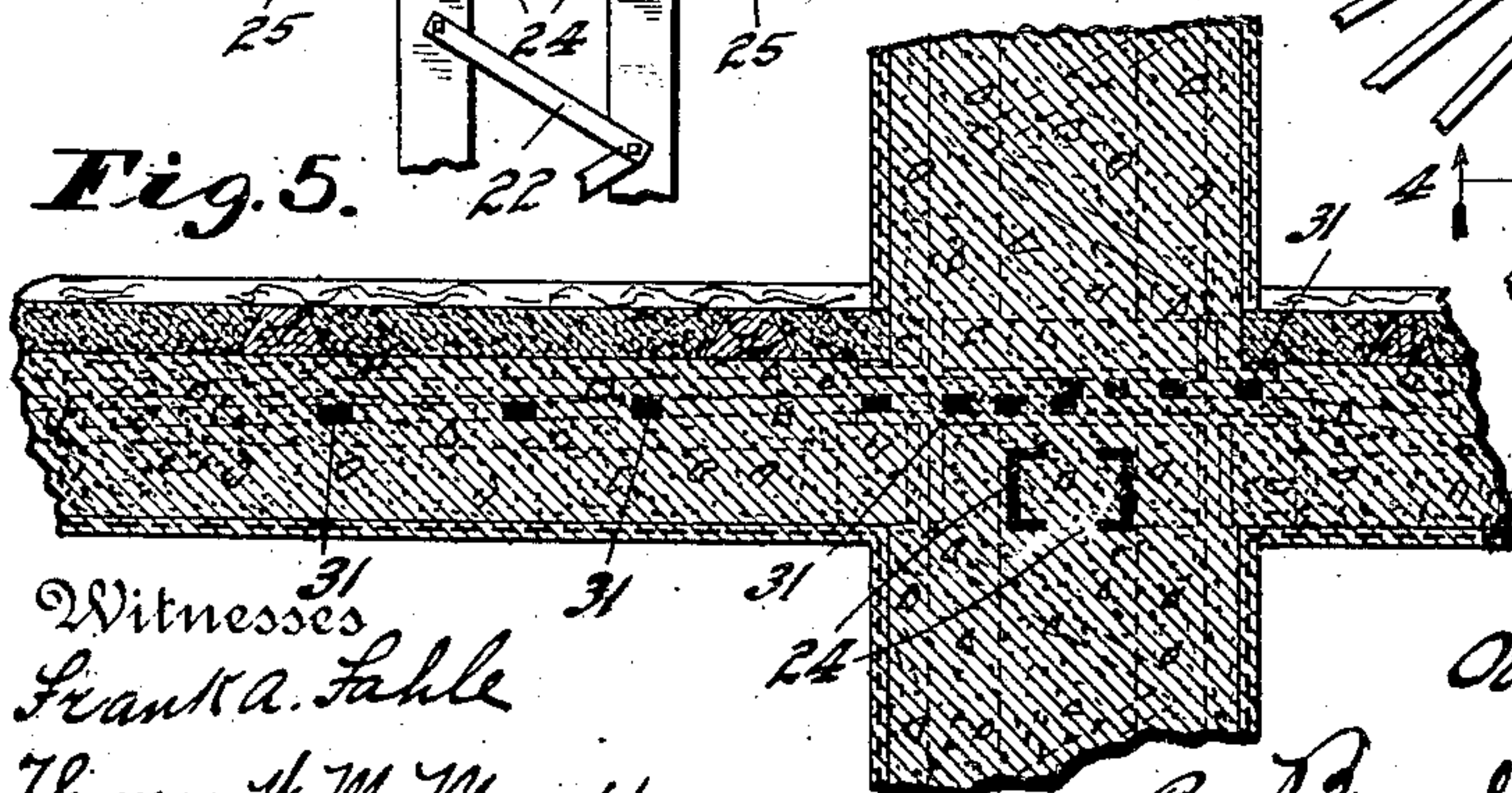


Fig. 5.



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2 SHEETS—SHEET 2.

Fig. 6.

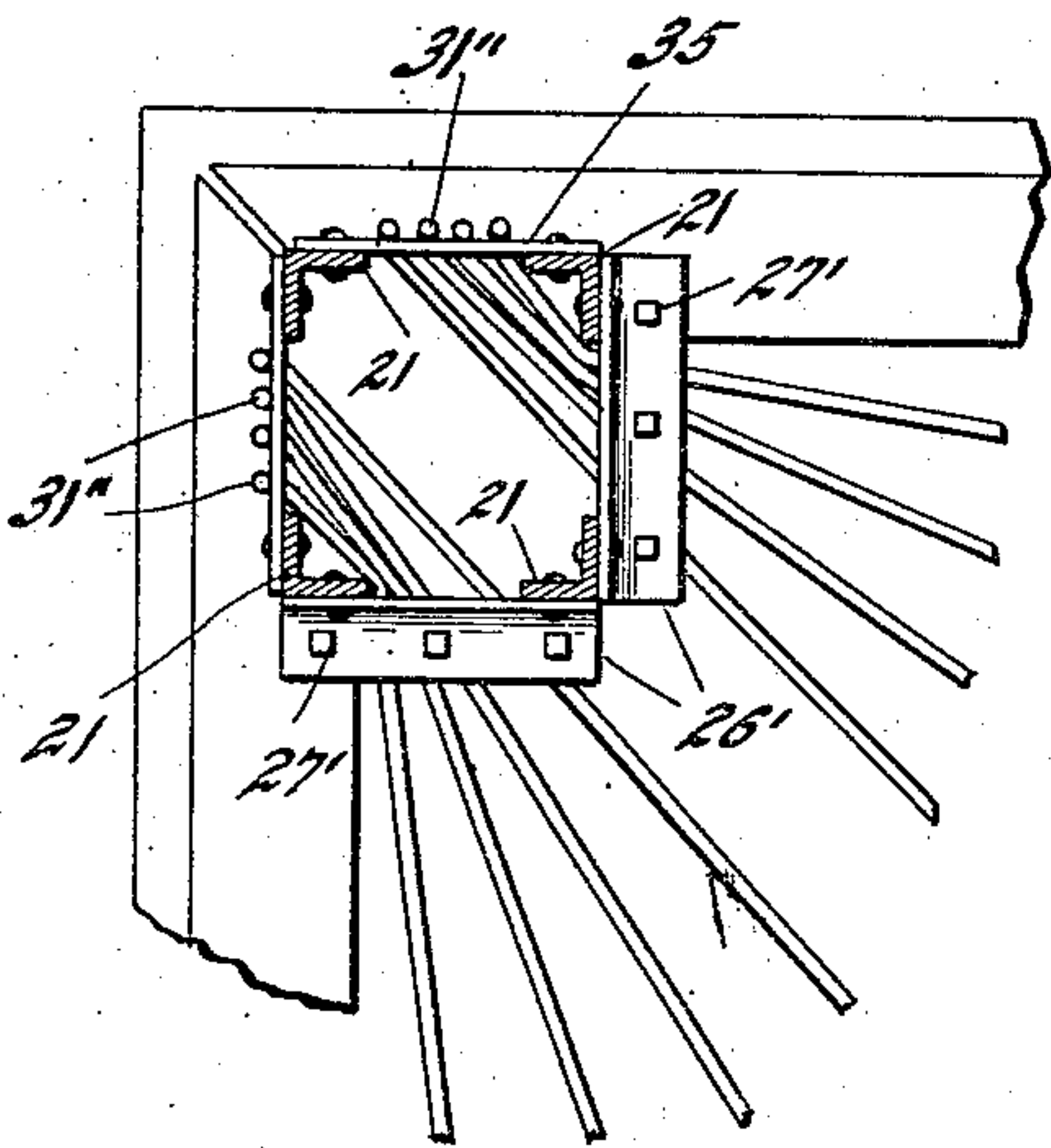


Fig. 7.

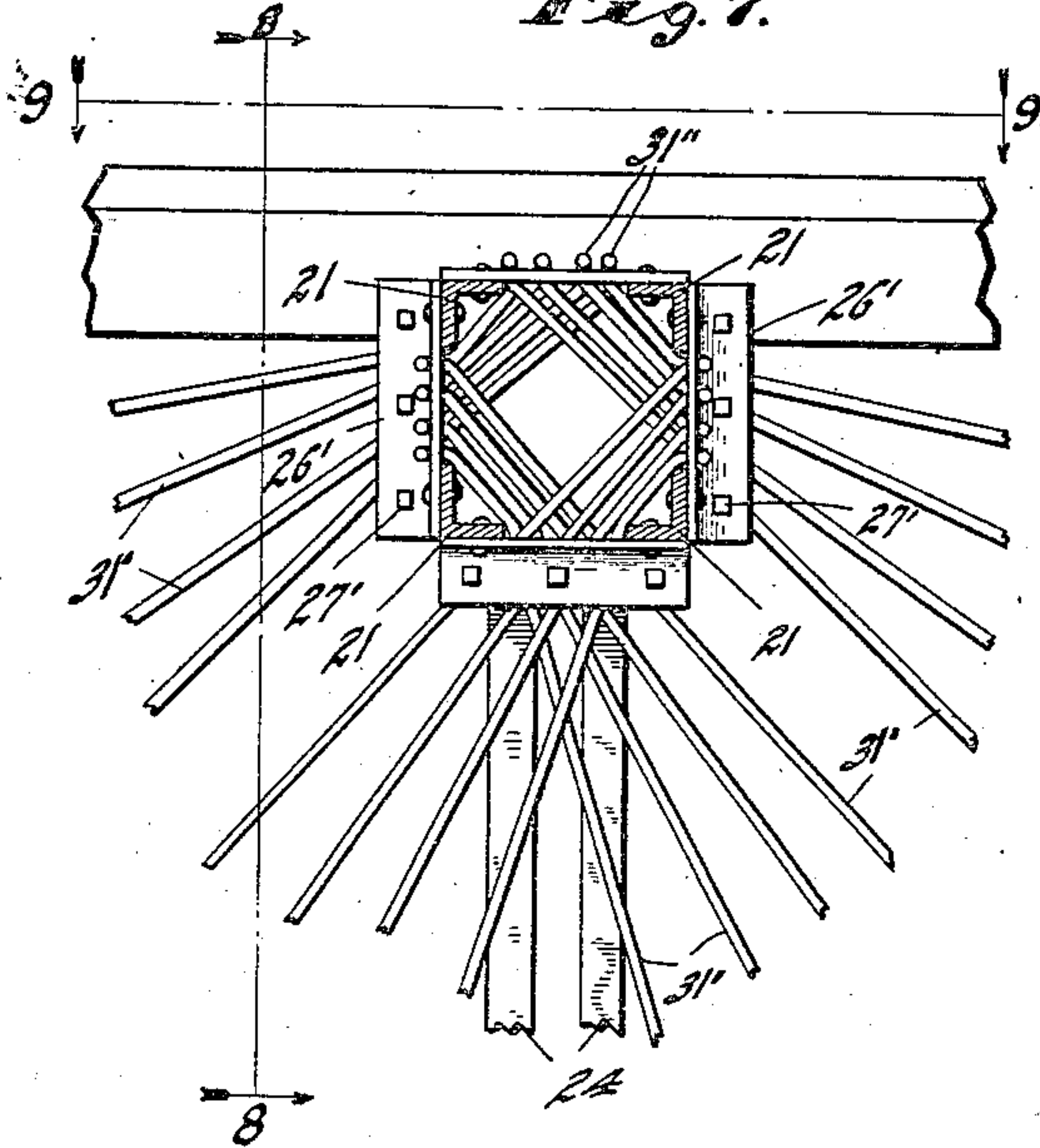


Fig. 8.

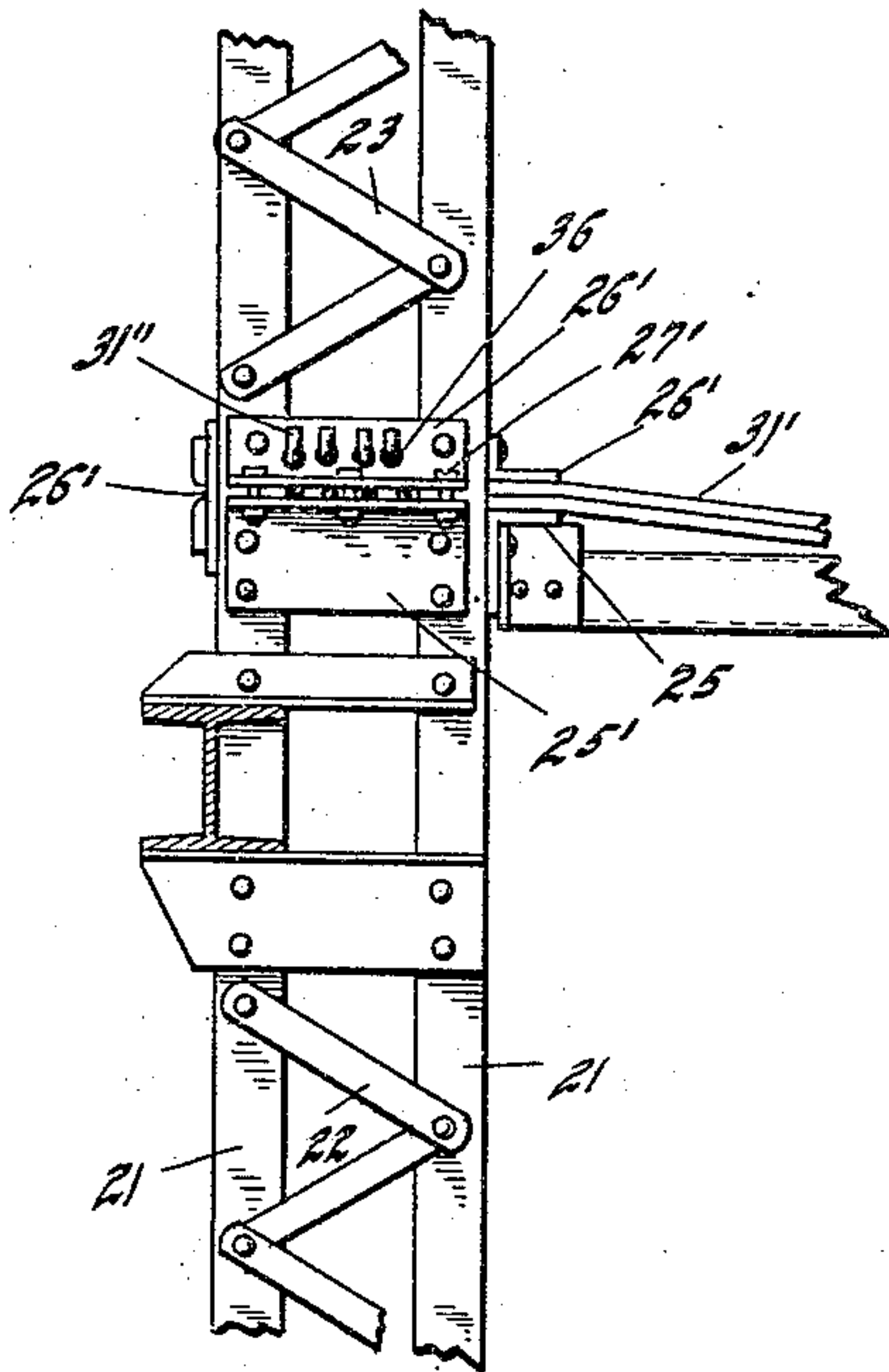
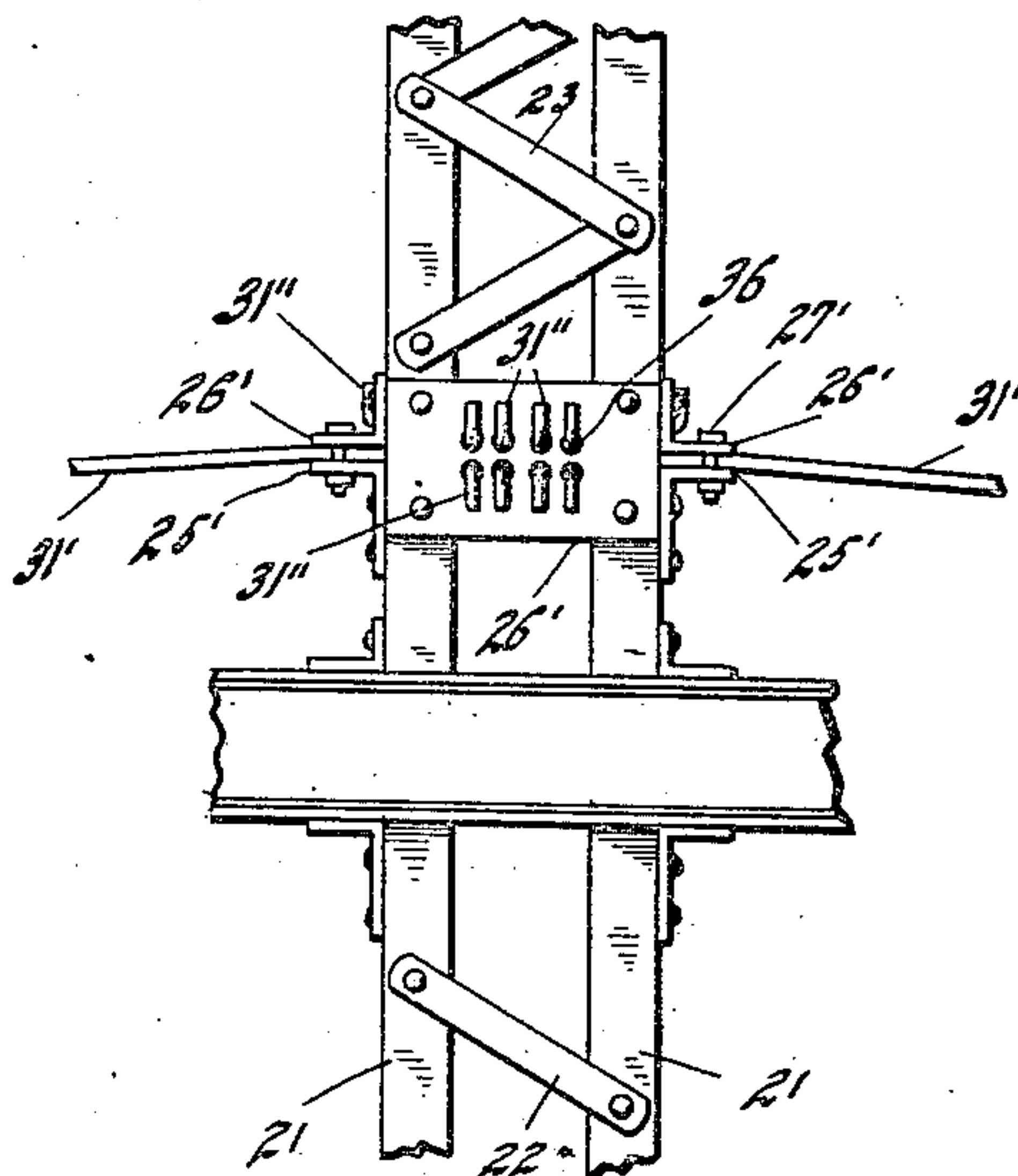


Fig. 9.



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UNITED STATES PATENT OFFICE.

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BUILDING CONSTRUCTION.

936,342.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed December 2, 1908. Serial No. 465,685.

To all whom it may concern:

Be it known that I, OTTO N. MUELLER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Building Construction, of which the following is a specification.

The object of my invention is to produce certain improved details of construction in that type of reinforced concrete buildings illustrated in my previous patent No. 876,480.

The accompanying drawings illustrate my invention.

Figure 1 is a plan of a corner floor square and adjacent floor squares of the reinforcing skeleton; Fig. 2 a detail on a larger scale of an intermediate side column and adjacent reinforcing members; Fig. 3 a similar view of a middle column and adjacent reinforcing members, being a section on line 3—3 of Fig. 4; Fig. 4 a section on line 4—4 of Fig. 3; Fig. 5 a vertical section of a completed structure built upon the skeleton shown in Fig. 1, the section being taken through an intermediate column and adjacent floor squares; Fig. 6 a plan of a corner column with the reinforcing members arranged in a manner different from that shown in Fig. 1; Fig. 7 a plan of an intermediate wall column with the floor square reinforcement arranged in the same manner as that shown in Fig. 6; Fig. 8 a section on line 8—8 of Fig. 7, and Fig. 9 an elevation on line 5—9 of Fig. 7.

In the drawings, 21 indicates angle bars connected by lattice members 22 and 23 into a column structure and 24 indicates light channel or other suitable beams of sufficient weight to connect the columns into a light skeleton. The channels 24 may be comparatively light in weight and not much more than sufficient to serve as reinforcement for the sides of the floor squares and may be very considerably lighter than would be necessary to in themselves sustain the loads to which the completed structure would be subjected. As in my above mentioned patent I reinforce the floor squares by means of reinforcing rods 31 which are concentrated at a principal point of support and radiated therefrom to various points of a floor square. In practice I have found that it is very essential that some means be provided to

maintain desired spacing of these radiating reinforcing rods while the concrete is being placed, because it is necessary for the workmen to step across the reinforcements and they are likely to misplace the various rods. For that reason I secure to the column reinforcements 21, angle plates 25 and 26 between which the reinforcing bars 31 lie. In practice I find it desirable to rivet the lower angles 25 in place and, after placing the reinforcing bars thereover, to bolt the angles 26 in place and then pass bolts 27 down through the parallel arms of the two angles 25 and 26 so that, after the reinforcing bars 31 are properly spaced, bolts 27 may be tightened and the reinforcing bars thus firmly clamped between the angles 25 and 26 and the reinforcing bars 31 thus maintained in their spacing.

In Figs. 1 to 4 inclusive I have shown the reinforcing bars 31 as anchored around one or the other of the column reinforcing members 21. While this is entirely satisfactory in most cases, I have found in practice that such an arrangement is apt to require a considerable thickness of veneering upon the outer or exposed walls of the structure, as will be apparent from an inspection of Fig. 2 and I therefore have devised the arrangement shown in Figs. 6 to 9 inclusive. In this form the upper angle plate 26', or anchor plates 35, are perforated at 36, the ends of the reinforcing bars 31' passed through such openings 36 and then turned transversely to form a hook or finger 31'' thus anchoring the reinforcing bars to the column reinforcement. The parallel portions of the clamping angles 25' 26' are clamped upon the reinforcing bars 31' by means of bolts 27' as in the other construction.

After the skeleton frame of columns and connecting beams is erected for one or two stories a suitable temporary centering is provided to form a support and receiver for the loose ends of the reinforcing bars 31 and the concrete, and the skeleton is concreted in a usual manner as is described in my above mentioned patent.

I claim as my invention:

1. In a reinforced concrete structure, the combination of metallic column structures, a reinforced concrete floor comprising reinforcing bars radiating from said column

structures across the adjacent floor squares, and means for clamping said radiating bars in an adjusted relative position.

2. In a reinforced concrete structure, the
5 combination of metallic column structures, a reinforced concrete floor comprising reinforcing bars radiating from said column structures across the adjacent floor squares, and a pair of clamping plates carried by a
10 column structure respectively over and under a group of radiating reinforcing bars, and means for clamping said plates upon said radiating bars, for the purpose set forth.

3. In a reinforced concrete structure a re-

inforcing metal skeleton comprising a group 15
of radiating floor square reinforcing bars, means for rigidly holding said radiating bars in a predetermined relation to each other, and a concrete floor embedding said group
20 of reinforcing bars.

In witness whereof, I, have hereunto set my hand and seal at Indianapolis, Indiana, this twentieth day of November, A. D. one thousand nine hundred and eight.

OTTO N. MUELLER. [L. S.]

Witnesses:

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THOMAS W. McMEANS.