

Sept. 2, 1958

M. H. BECKNER

2,850,172

STORAGE RACKS

Filed May 31, 1956

4 Sheets-Sheet 1

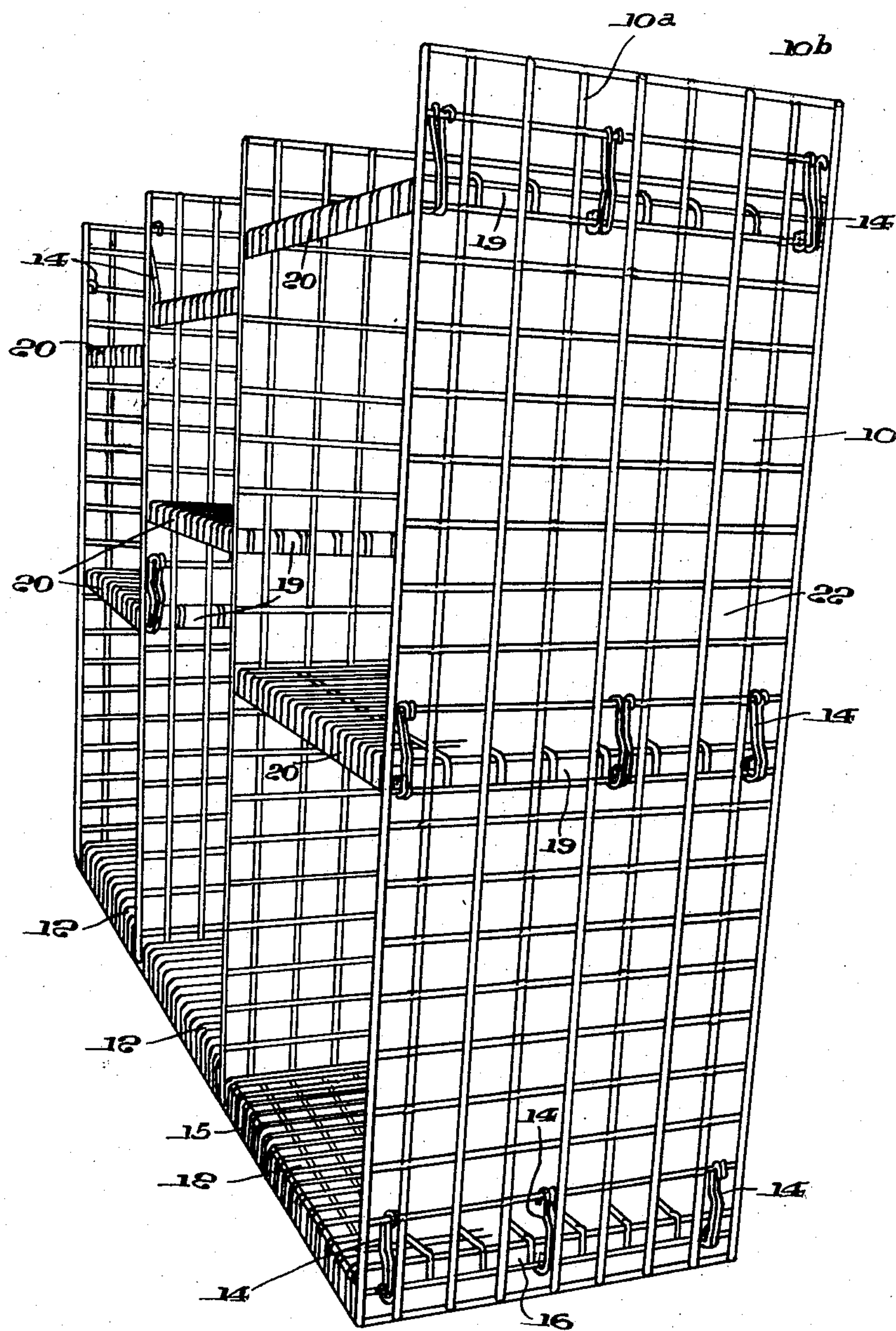


Fig. 1.

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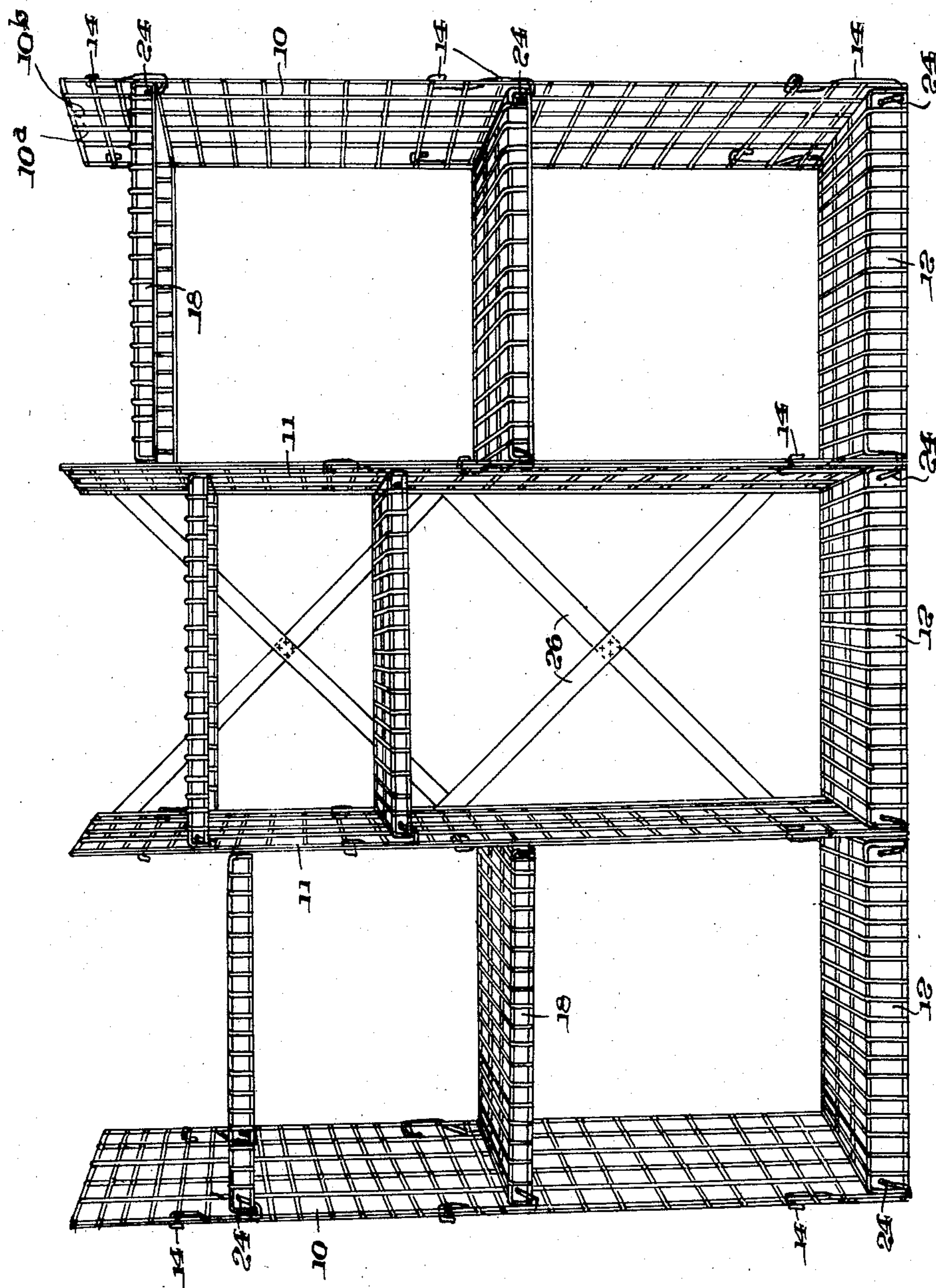
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4 Sheets-Sheet 2



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4 Sheets-Sheet 3

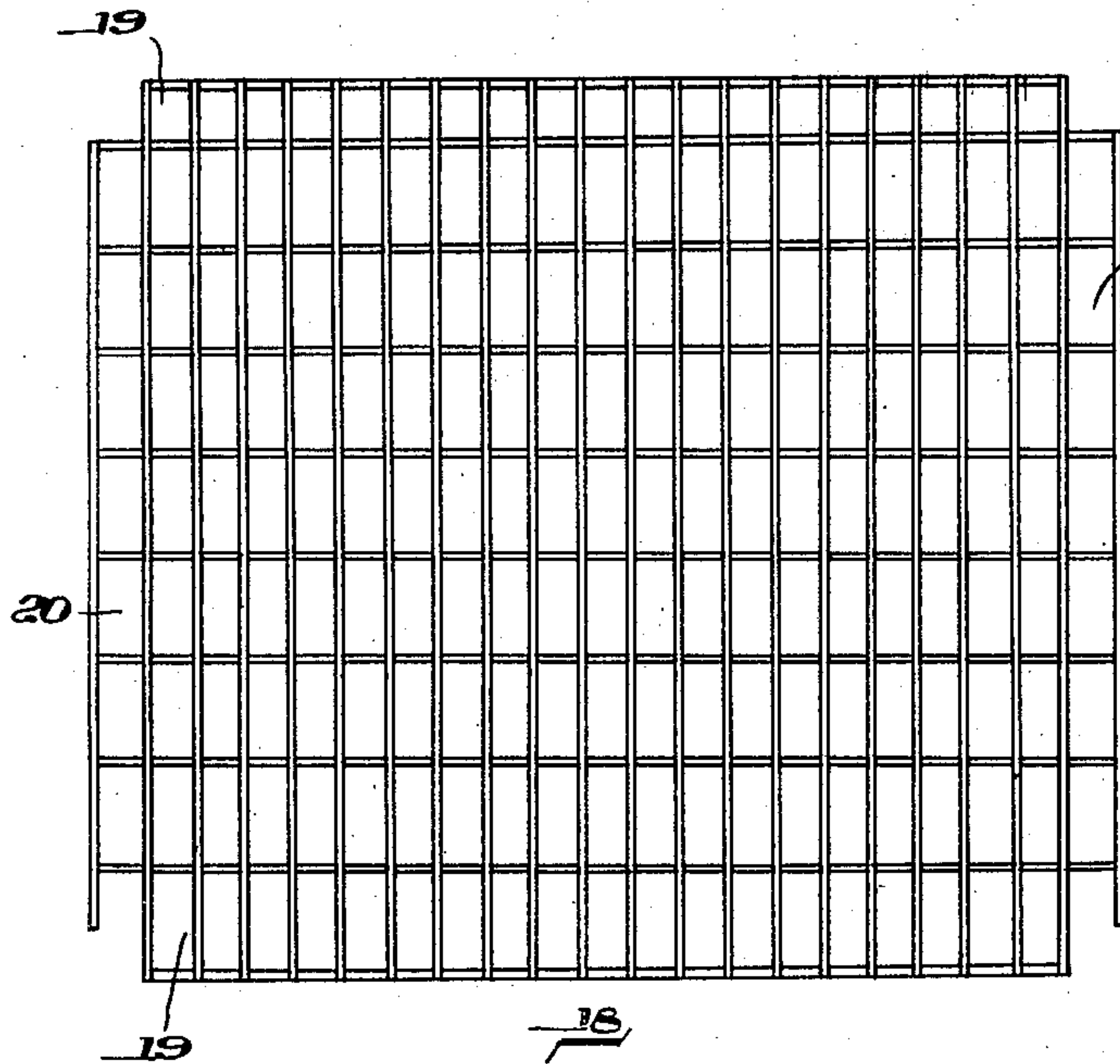


Fig. 5.

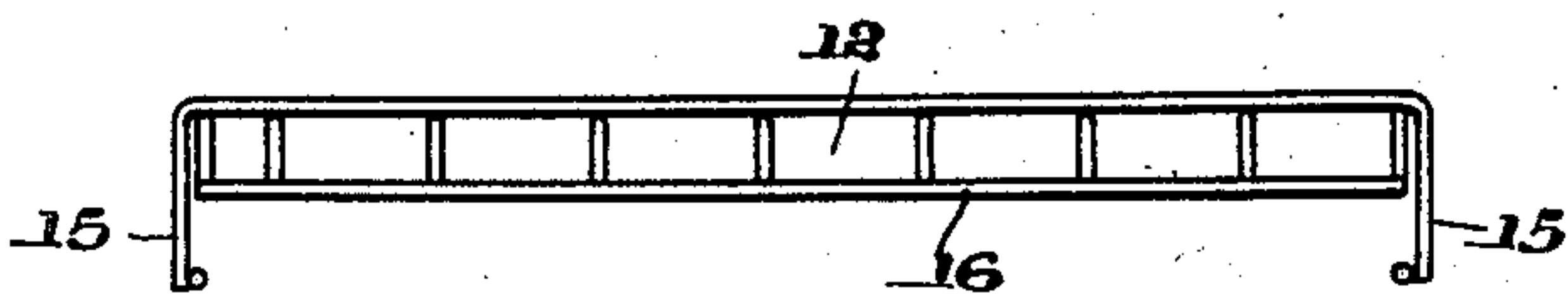


Fig. 4.

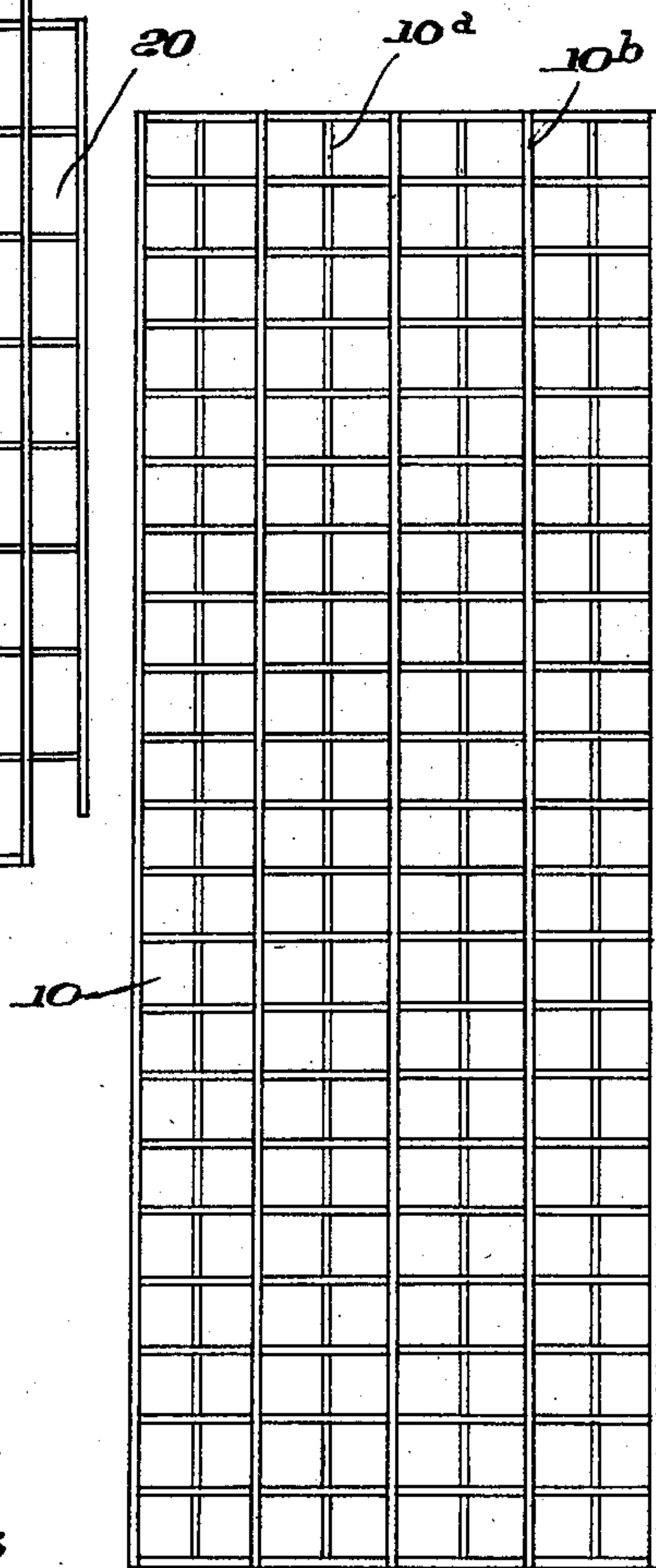


Fig. 3.

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4 Sheets-Sheet 4

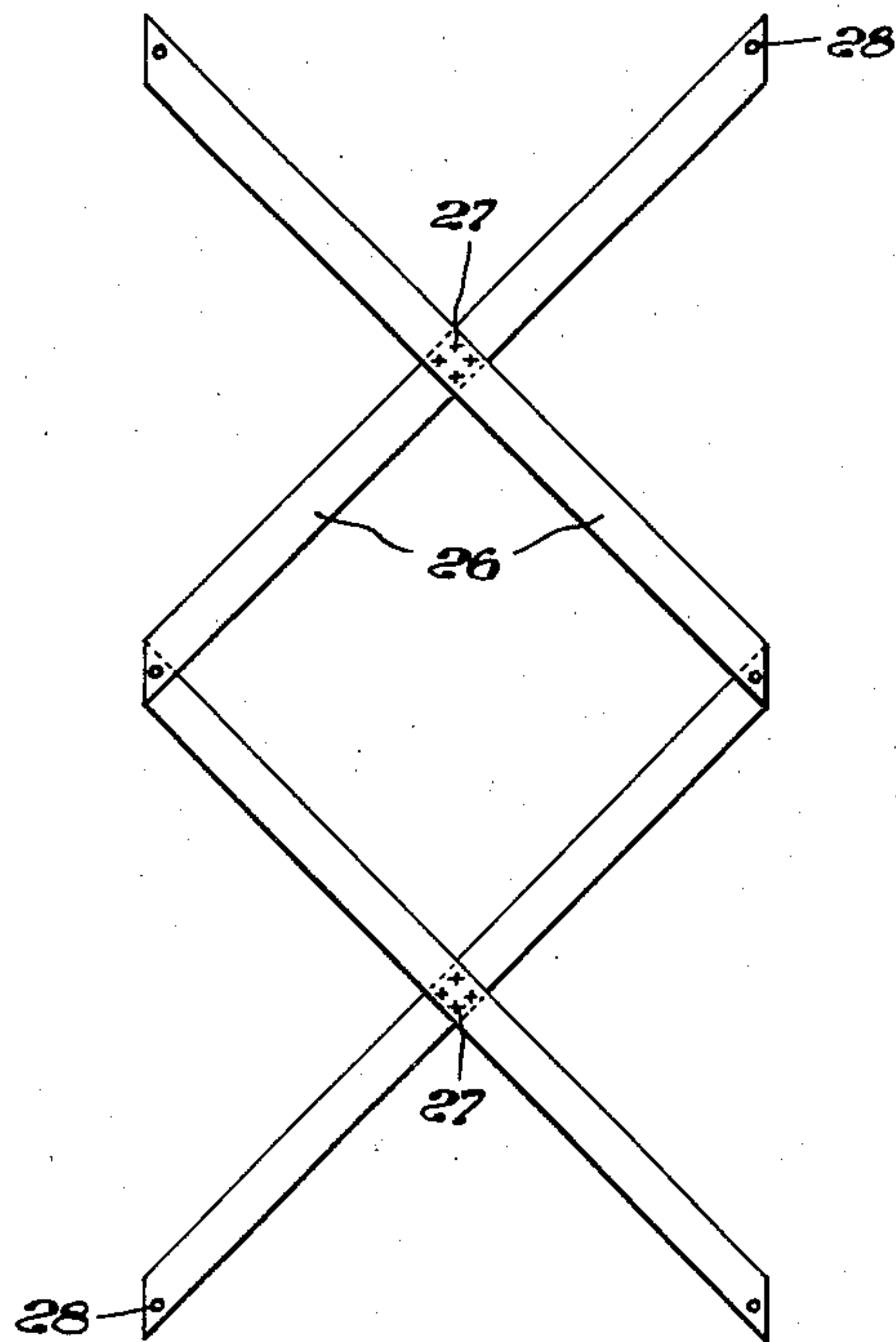


Fig. 6.

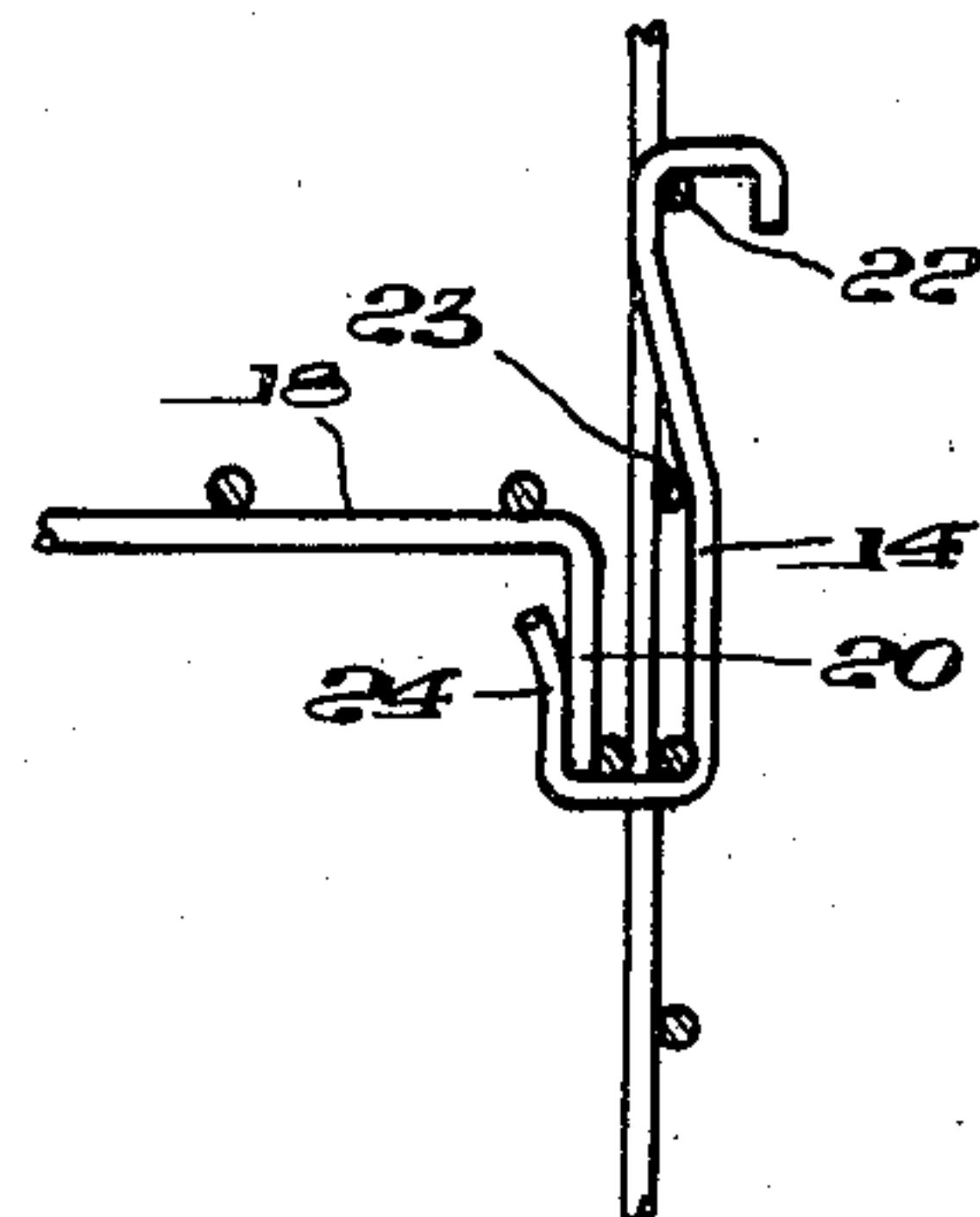


Fig. 8.

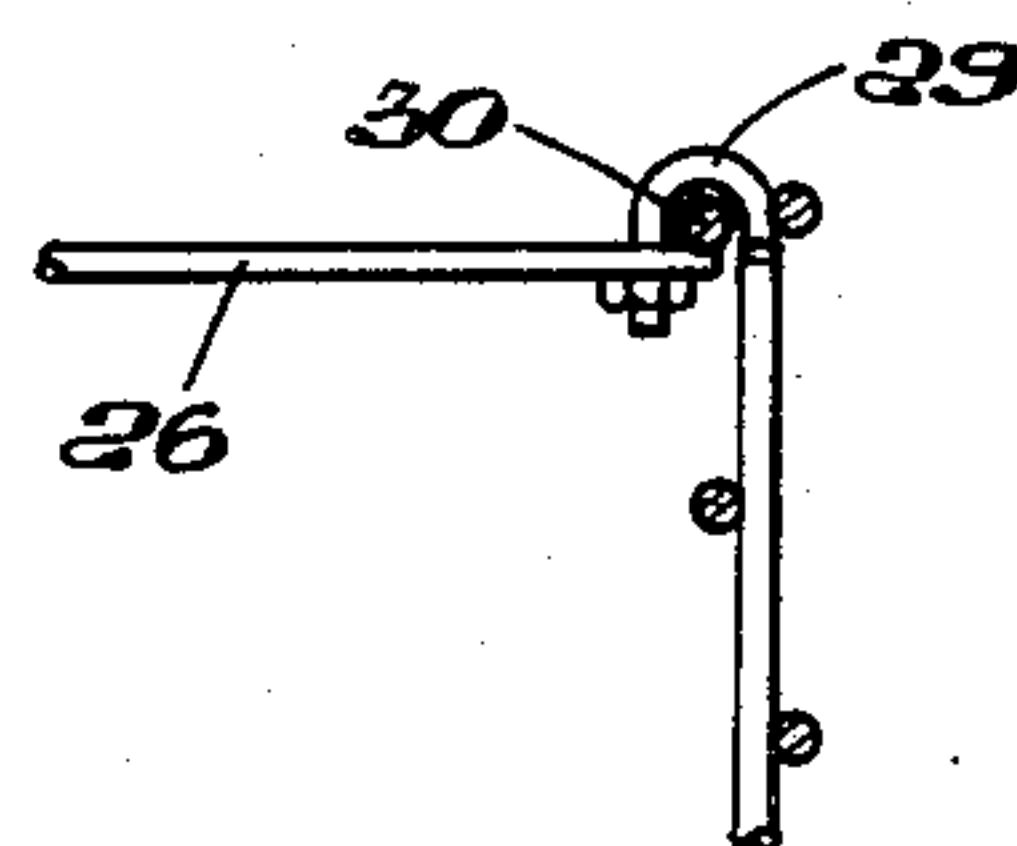


Fig. 9.

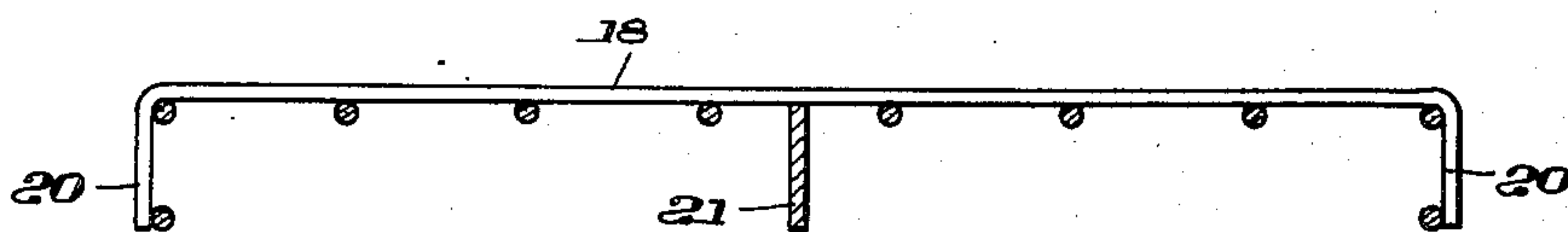


Fig. 7.

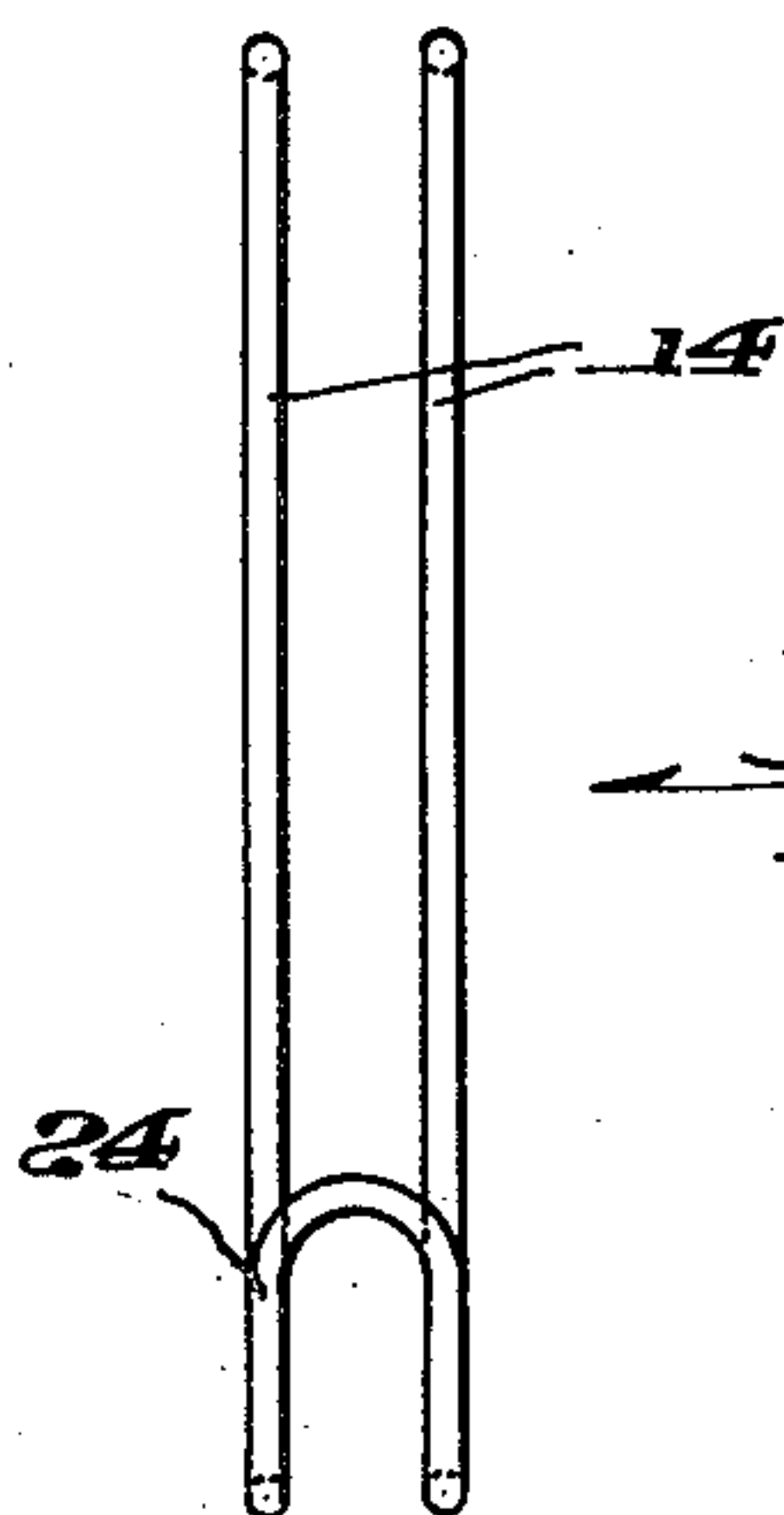


Fig. 10.

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1

2,850,172

STORAGE RACKS

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Application May 31, 1956, Serial No. 588,375

3 Claims. (Cl. 211-148)

My invention relates to storage racks for use in warehouses, stock rooms, and the like, and has for its object racks of light-weight form which can be readily assembled and disassembled and which may be readily adjustable to receive packages and other articles of various sizes.

As shown in the accompanying drawings,
Figure 1 is a perspective view of a completed rack;
Figure 2 is a face view thereof;
Figure 3 shows one of the vertical walls;
Figure 4 is an end view of the bottom wall or shelf;
Figure 5 is a plan view of the welded mesh for one of the upper shelves, before bending;
Figure 6 is a view of the diagonal braces of Fig. 2;
Figure 7 is a sectional view of one of the upper shelves;
Figure 8 is a detailed view showing the manner in which the shelves are hooked on the end walls;
Figure 9 shows the manner in which the diagonal braces are connected to the vertical walls, and
Figure 10 is an enlarged view of one of the hooks of Fig. 1.

While Figs. 1 and 2 show a rack structure having end walls 10 and intermediate walls 11, it will be understood that only two vertical walls or any greater number can be used, depending upon the number of shelf stacks desired. As shown in Fig. 3, the end walls may comprise rods 10a and 10b welded to the inner and outer sides respectively of horizontal rods, the rods 10b being preferably thicker than rods 10a.

Bottom shelves or bases are indicated by the numerals 12 and these are hooked to the end walls by hangers or hooks such as that shown at 14 in Fig. 8, that is used as a hanger for the upper shelves. In the case of the bottom members 12, these hooks 14 serve, in effect, as tie members for holding the vertical walls in place against the base members 12 and preventing the spreading of the vertical walls relative to one another.

As shown in Fig. 1, the front edge of the welded mesh that forms each base 12 is bent down at 15 and rests directly against the floor, each end edge 16 that is engaged by the hooks 14 is spaced somewhat above the floor to more readily accommodate the hooks. The down-bent edges at 16 and 15 are welded together at the corners of the deck or base to give greater rigidity.

Each shelf 18 is of welded mesh structure formed of wires which may suitably be of 1.0 gauge. The edge portions 19 and 20 of sheets as shown in Fig. 5 are bent downwardly and bent-down portions welded together at the corners of the shelf. Stiffening bars 21 as shown in Fig. 7, are welded to the shelves 18 where heavy loads are anticipated.

The shelves 18 are connected to the vertical walls 10 and 11 by the hooks 14 which, as shown more clearly in Figs. 1 and 8, engage over horizontal wires 22 of the vertical wall mesh members 10 and 11 and overlie the outer sides of wires 23. Their intermediate bends at 24 (Fig. 10) will serve as seats or saddles for the down-turned edges 19 of the shelves 18, thus serving not only

2

to support the shelves under vertical loads but as tie members. It will be thus seen that the shelves can readily be placed at desired heights depending upon the amount and size of lading that is to be placed on each shelf.

At least some of the various members of the structure, including the turned-down edges of the shelves or the vertical walls, or the hooks, have some resiliency and have to be stressed somewhat when being assembled, so that the completed structure will have some rigidity.

For accommodating very heavy loads, the diagonal braces 26 are provided which may suitably be in the form of flat strips bent or welded together at 27, as shown in Fig. 6. The strips have bolt holes 28 to receive J-bolts 29 that are placed in hooked engagement with rods 30 of the vertical walls.

I claim as my invention:

1. A storage rack assembly comprising a pair of vertical side walls of welded mesh form that include horizontal rods in vertically-spaced relation, pairs of resiliently flexible hangers each of which has a stem portion that is disposed against the inner side of an upper rod and against the outer side of a lower rod, the upper end of the stem portion having an outwardly and downwardly extending hook supported by the upper rod, an inwardly and upwardly projected hook on the lower end of the said stem portion, and vertically-spaced shelves between two opposite side walls and having hook-engaging elements near their ends extending into two of the last-named hooks, the hooks being deflected by the side walls and the ends of the shelves from their normal positions, to thereby hold the side walls in tensioned engagement with the shelf edges.

2. A structure as recited in claim 1, wherein a second pair of vertical walls are in perpendicularly off-set planes from said pair of walls and connected together by shelves, a third set of vertically-spaced shelves connecting the two pairs of vertical walls, and diagonal brace members connecting the two pairs of walls together at the rear edges of the third set of shelves.

3. A storage rack assembly comprising vertical side walls that include horizontal rods in vertically-spaced relation, resiliently flexible hangers each having a vertical stem portion that is disposed against the inner side of an upper rod and against the outer side of a lower rod, the upper end of the stem portion having an outwardly extending hook supported by the upper rod, an inwardly and upwardly projected hook on the lower end of the said stem portion, and a shelf of resiliently flexible material between the side walls and having hook engaging elements near its ends extending into two of the last-named hooks, the shelf having its end edges bent downwardly and normally slightly flared but held flatwise against the inner surfaces of the side walls by the hooks whereby there is tensioned engagement between the side walls and the outer vertical faces of the downwardly bent edges.

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