

(No Model.)

2 Sheets—Sheet 1.

C. J. REYNOLDS.
HATCHWAY GUARD.

No. 500,721.

Patented July 4, 1893.

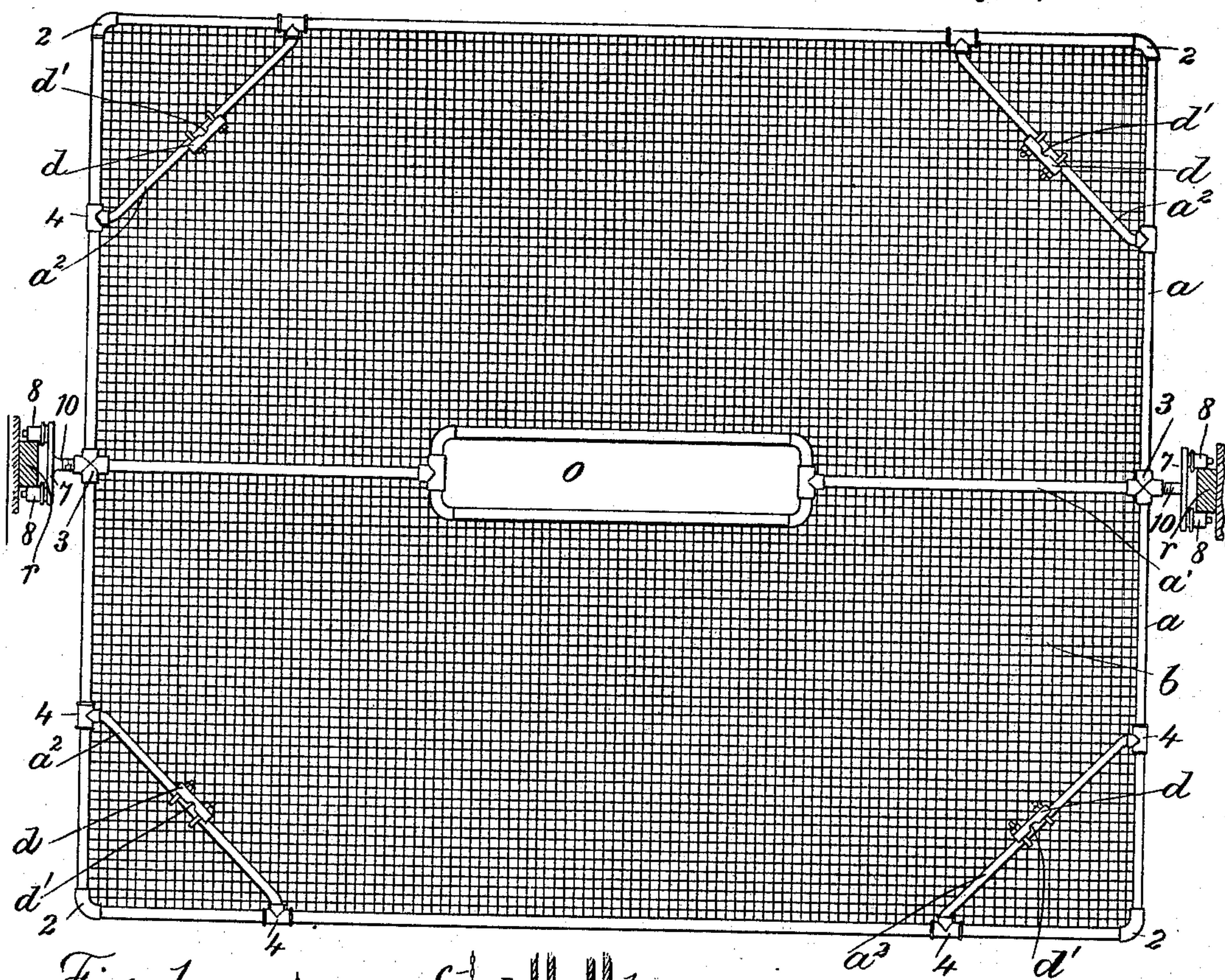


Fig. 1

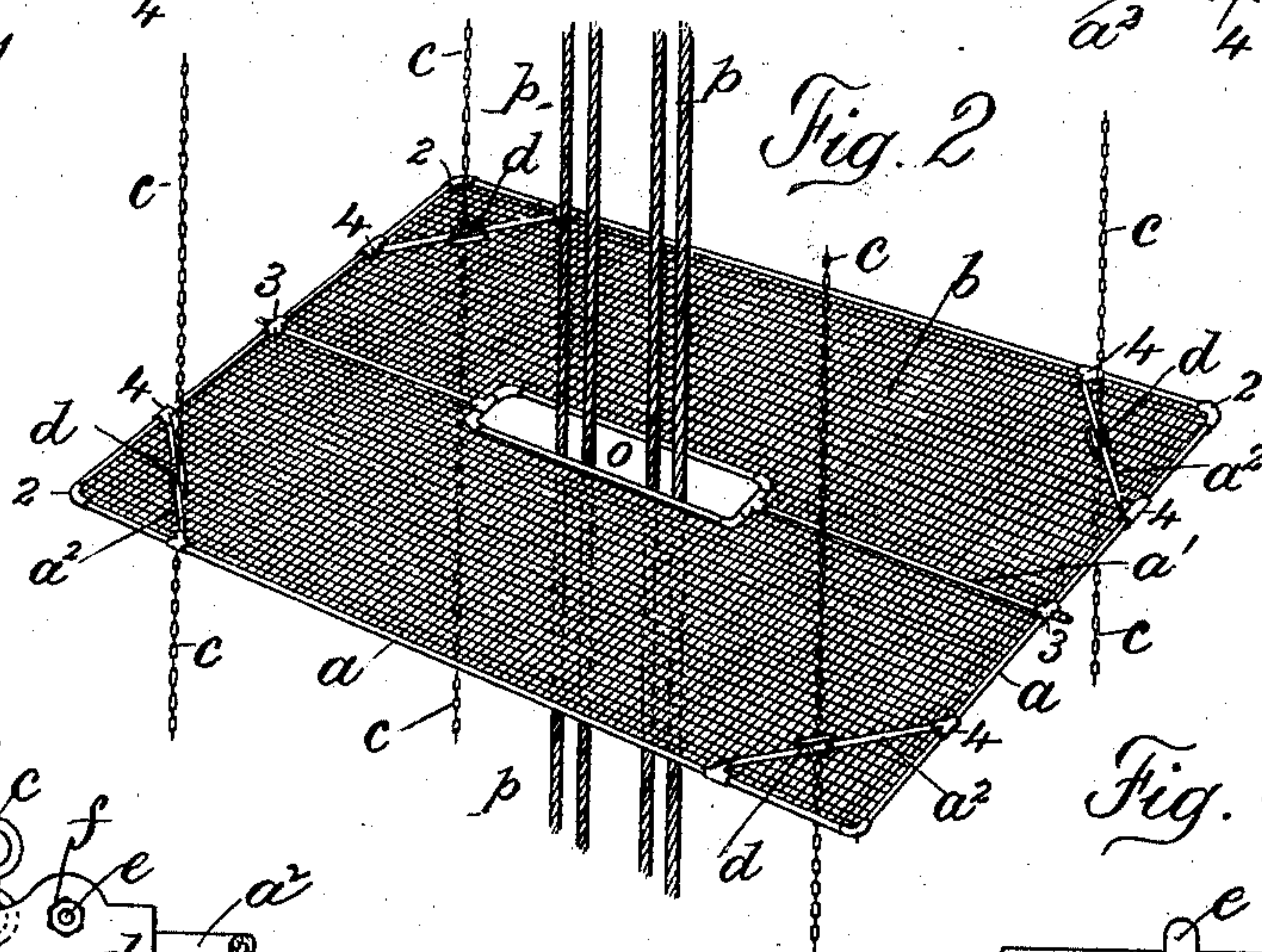


Fig. 2

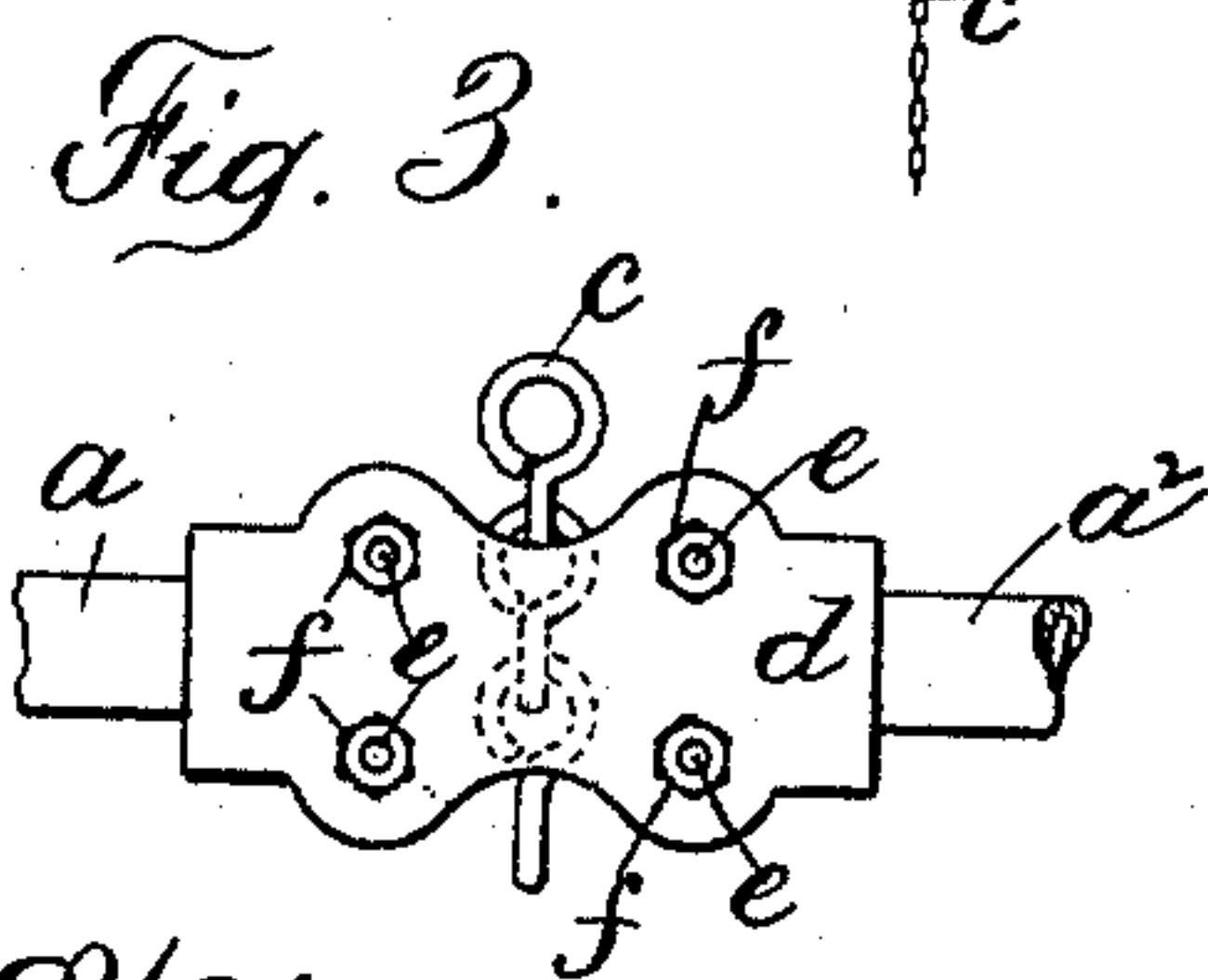


Fig. 3.

Witnesses.
H. A. Hall.
W. G. McLeod.

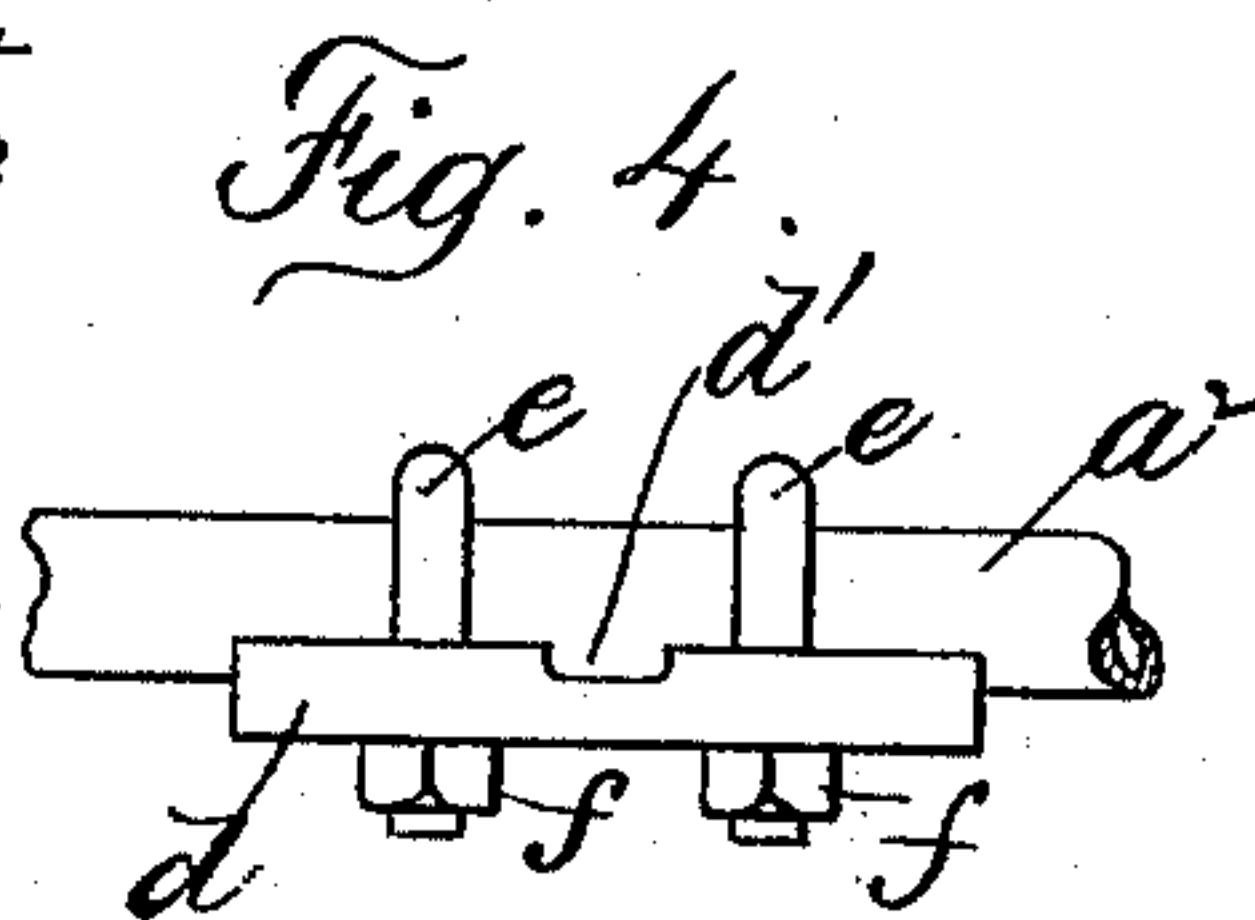


Fig. 4

Inventor:
C. J. Reynolds
by night Brown & Connelley
Attys

(No Model.)

2 Sheets—Sheet 2.

C. J. REYNOLDS.
HATCHWAY GUARD.

No. 500,721.

Patented July 4, 1893.

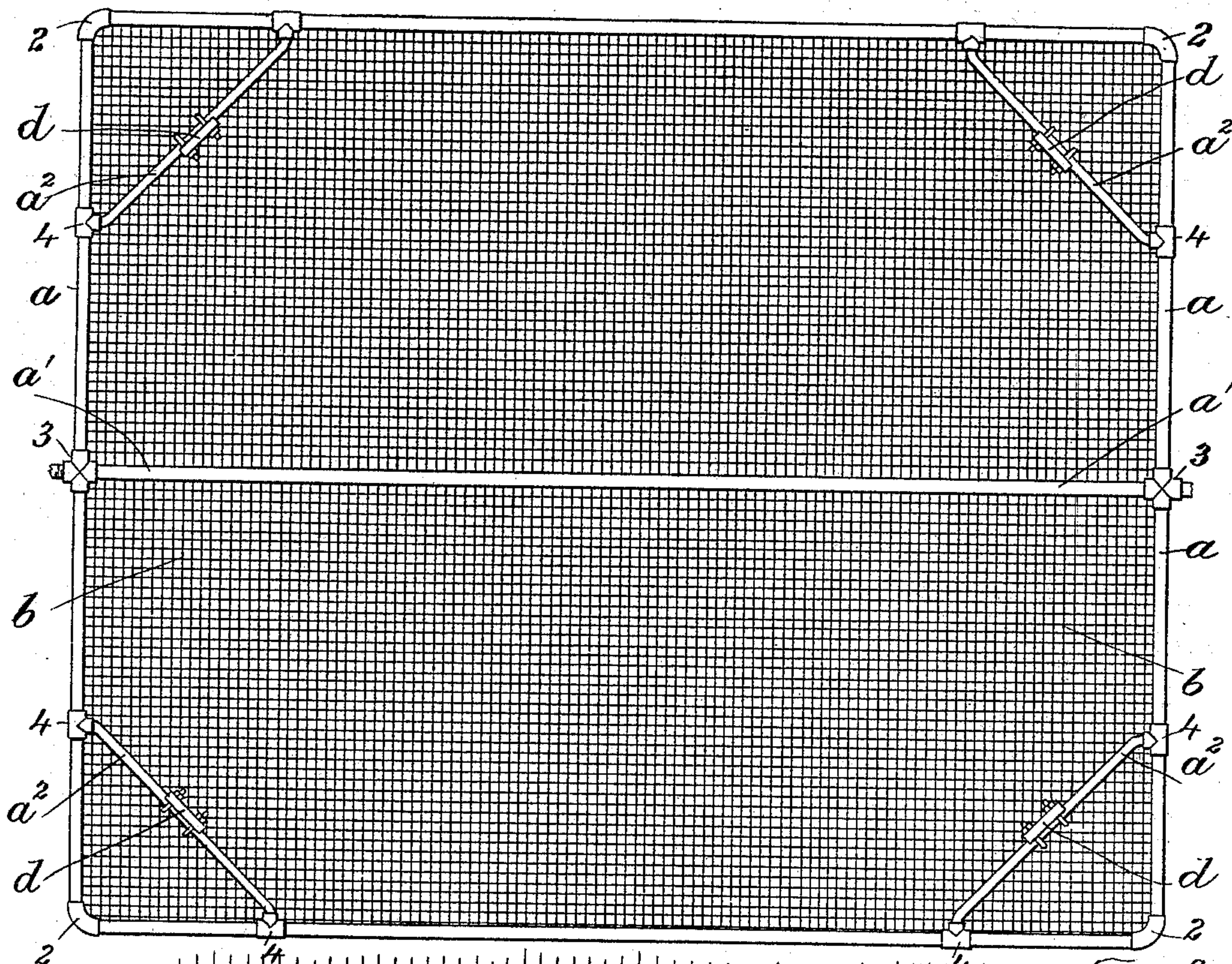


Fig. 8.

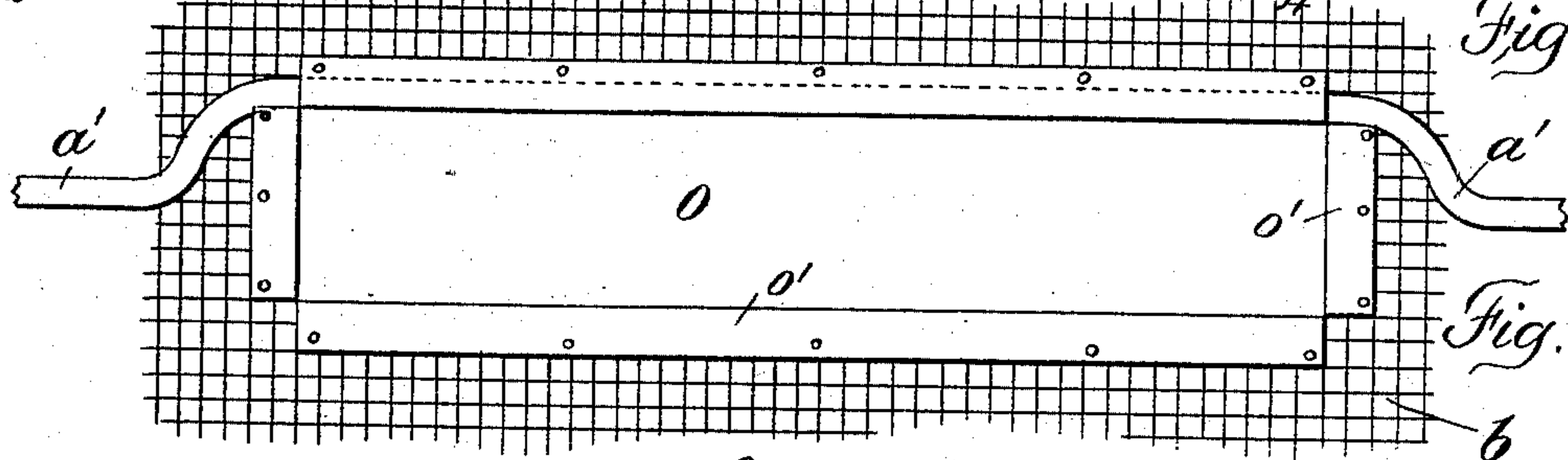


Fig. 6.

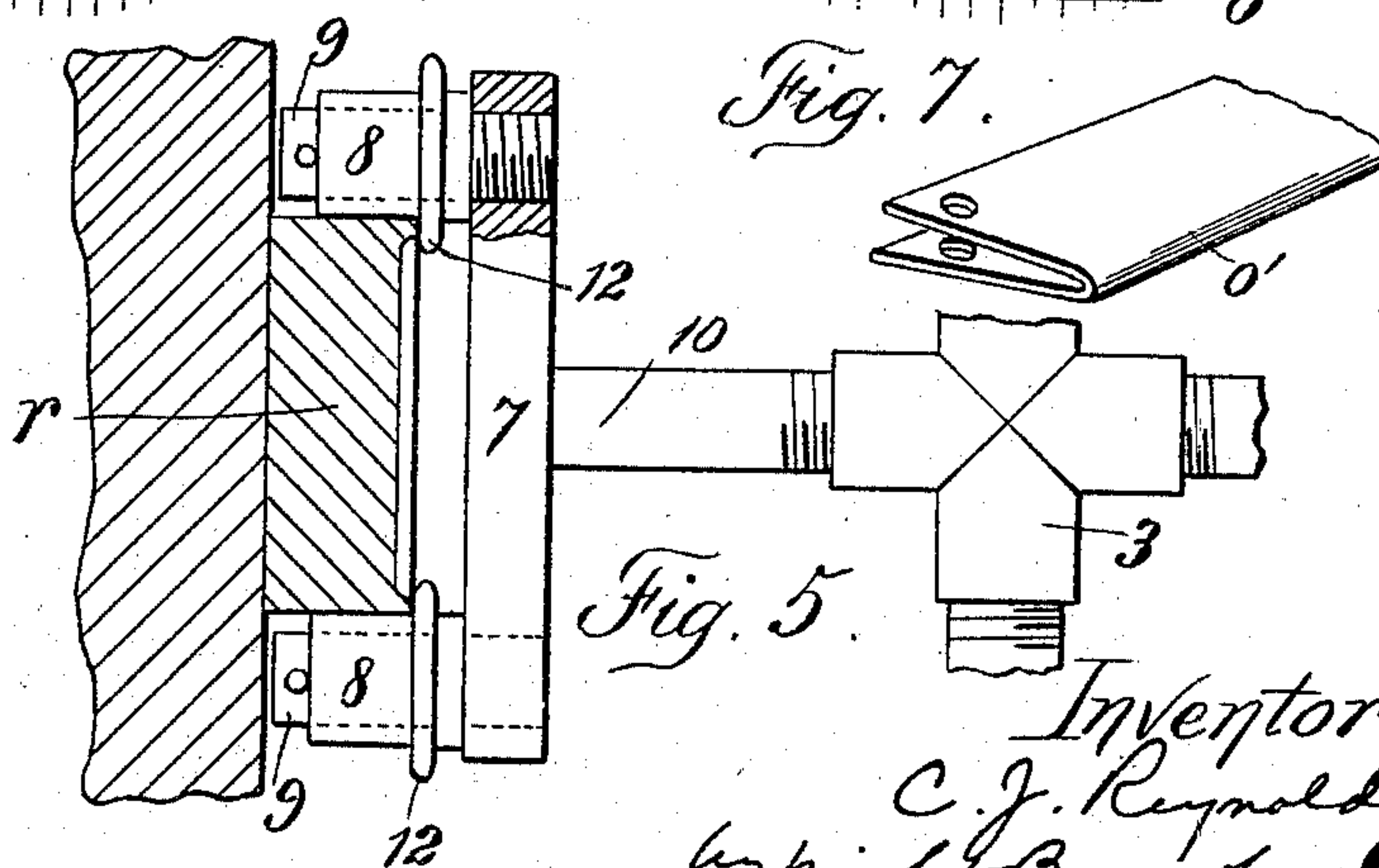


Fig. 7.

Fig. 5.

Witnesses:
H. A. Hall
H. G. McLeod.

Inventor
C. J. Reynolds
by Wright Brown & Co.
Attys.

UNITED STATES PATENT OFFICE.

CHARLES J. REYNOLDS, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE ELEVATOR SAFETY MANUFACTURING COMPANY, OF SAME PLACE.

HATCHWAY-GUARD.

SPECIFICATION forming part of Letters Patent No. 500,721, dated July 4, 1893.

Application filed September 1, 1892. Serial No. 444,727. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. REYNOLDS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Hatchway-Guards, of which the following is a specification.

This invention relates to hatchway guards consisting of platforms which are suspended in two series, one above and the other below an elevator, in such manner as that when the elevator is rising it will raise the platforms of the lower series successively into position to cover the hatchways below it, and at the same time raise and displace the platforms of the series above it, the platforms of the upper series being brought successively into position and those of the lower series displaced by the descent of the elevator.

The invention has for its object to provide a light, strong and durable platform or guard adapted to be used as a member of a series of platforms operating as above described, and to this end it consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings forming a part of this specification, Figure 1 represents a top plan view of a hatchway guard or platform embodying my invention and belonging to the upper series. Fig. 2 represents a perspective view of the same, showing portions of the suspension chains and of the hoisting ropes of the elevator. Figs. 3 and 4 represent details of the chain grasping levers shown in Figs. 1 and 2. Fig. 5 represents a top and a sectional view, showing the devices for guiding the platform in its upward and downward movements. Fig. 6 represents a top view, showing a modification. Fig. 7 represents a perspective view of a portion of Fig. 6. Fig. 8 represents a top view of a guard belonging to the lower series and having no central opening.

The same letters and numerals of reference indicate the same parts in all of the figures.

In carrying out my invention I provide a frame made of metal rods or bars, said frame being formed to approximately fit a hatchway, but enough smaller than the hatchway to pass freely through it. The frame comprises the marginal portion a , composed of

straight rods connected at the corners by elbows 2, the transverse bar a' extending across the frame and connected at its ends to the marginal portion by fittings 3, and the oblique corner bars or braces a^2 connected at their ends with the marginal portion by fittings 4, 4.

To the frame a is attached a diaphragm or septum b of wire netting sufficiently strong and of sufficiently fine mesh to constitute a guard capable of supporting the weight of a person, the netting being attached to the several parts of the frame in any suitable way. The guards are secured to chains c , of which there are preferably four. The chains supporting the lower series of guards, or those below the elevator, are attached to the elevator and depend therefrom, while the chains supporting the upper series of guards are attached to suitable fixed supports above the elevator. The chains are attached to the braces a^2 at points about midway of the length of said braces, so that the points of attachment of the chains are so far removed from the edges of the guard, that there is sufficient room for the slack portions of the chains to lie piled or coiled upon the upper surface of the guard without liability of falling over and hanging down from the edges of the guard. It is very desirable that the slack portions of the chains be kept within the area of the guard, as much trouble would be likely to arise if the chains were allowed to dangle from the edges of the guard. It is also important that the chains be attached directly to the frame. Hence the importance of the braces a^2 forming rigid parts of the frame and located within the margin thereof will be obvious. I do not limit myself however to the particular form and arrangement of the braces here shown, as said braces may be formed and arranged in any other suitable way without departure from the spirit of my invention, so long as they are adapted to be attached to the chains c at points sufficiently within the margin of the guard to prevent the chains from falling over the edges of the guard when slack.

The braces a^2 are shown in Figs. 1, 2, 3, 4 and 5 as provided with yokes or clamps d secured to the braces by U-shaped bolts e having nuts f , the chains being grasped between

said clamps and the braces which are provided with grooves d' to receive the chains.

The guards of the upper series are provided with openings o to accommodate the elevator hoisting ropes p . In Figs. 1 and 2 I show said opening surrounded by a frame which constitutes the central part of the bar a' . In Fig. 6 the bar a' is shown as offset and extending along only one side of the opening o , the other sides of said opening being composed of plates o' bent over the edges of the netting. The guards that are below the car are made without the opening o , as shown in Fig. 8.

$r r$ (Fig. 1) represent fixed vertical guides between which the elevator runs. Said guides are engaged with shoes ss affixed to the guards, each shoe being composed of a bar 7 having a shank 10 secured to one of the fittings 3, and two rollers 8, 8 mounted to rotate on studs 9, 9 affixed to said bar. The rollers bear on the edges of the guides $r r$ and are provided with flanges 12 which bear on the sides of said guides and prevent edgewise movement of the guards.

It will be seen that the cross bar a' and braces a^2 not only strengthen the frame, but

also support the netting at various points within the margin of the guard, thus insuring sufficient strength, the entire construction being at the same time light and durable.

I claim—

The combination with a hatchway guard, consisting of a metal frame, comprising marginal portions and a woven wire covering secured to said marginal portions, of rigid bars or braces extending across the space within said marginal portions and attached to the latter, clamps secured to said bars or braces, about midway of their ends, supporting chains secured between the clamps and braces, and forked shoes affixed to the sides of the frames and adapted to embrace fixed vertical guides, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 18th day of August, A. D. 1892.

CHARLES J. REYNOLDS.

Witnesses:

C. F. BROWN,

A. D. HARRISON.