(No Model.) 2 Sheets—Sheet 1.

T. F. SANFORD.

ELEVATOR DOOR.

No. 541,292. Patented June 18, 1895.

Fig. 1.

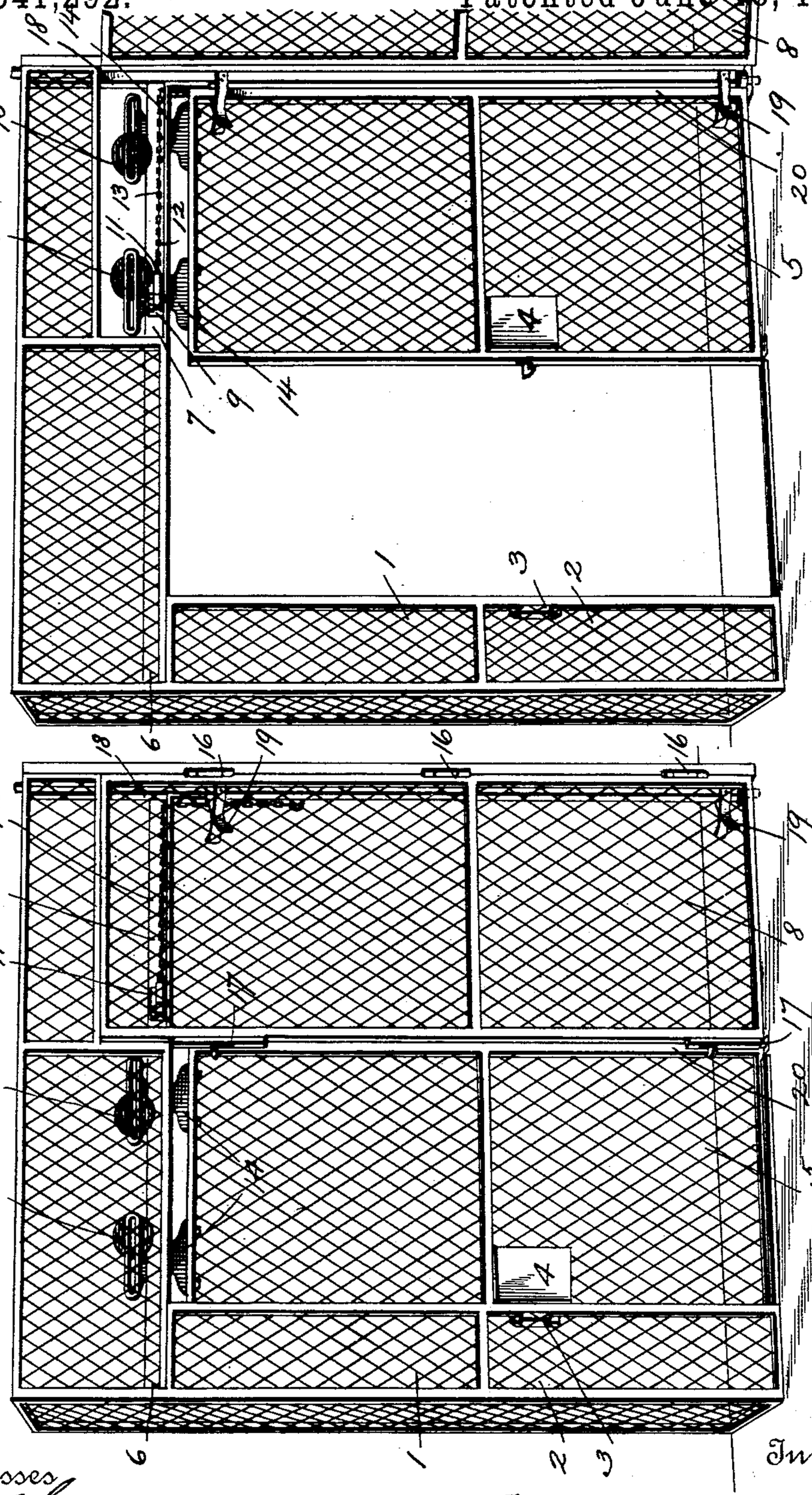

Fig. 2.

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(No Model.) 2 Sheets—Sheet 1.

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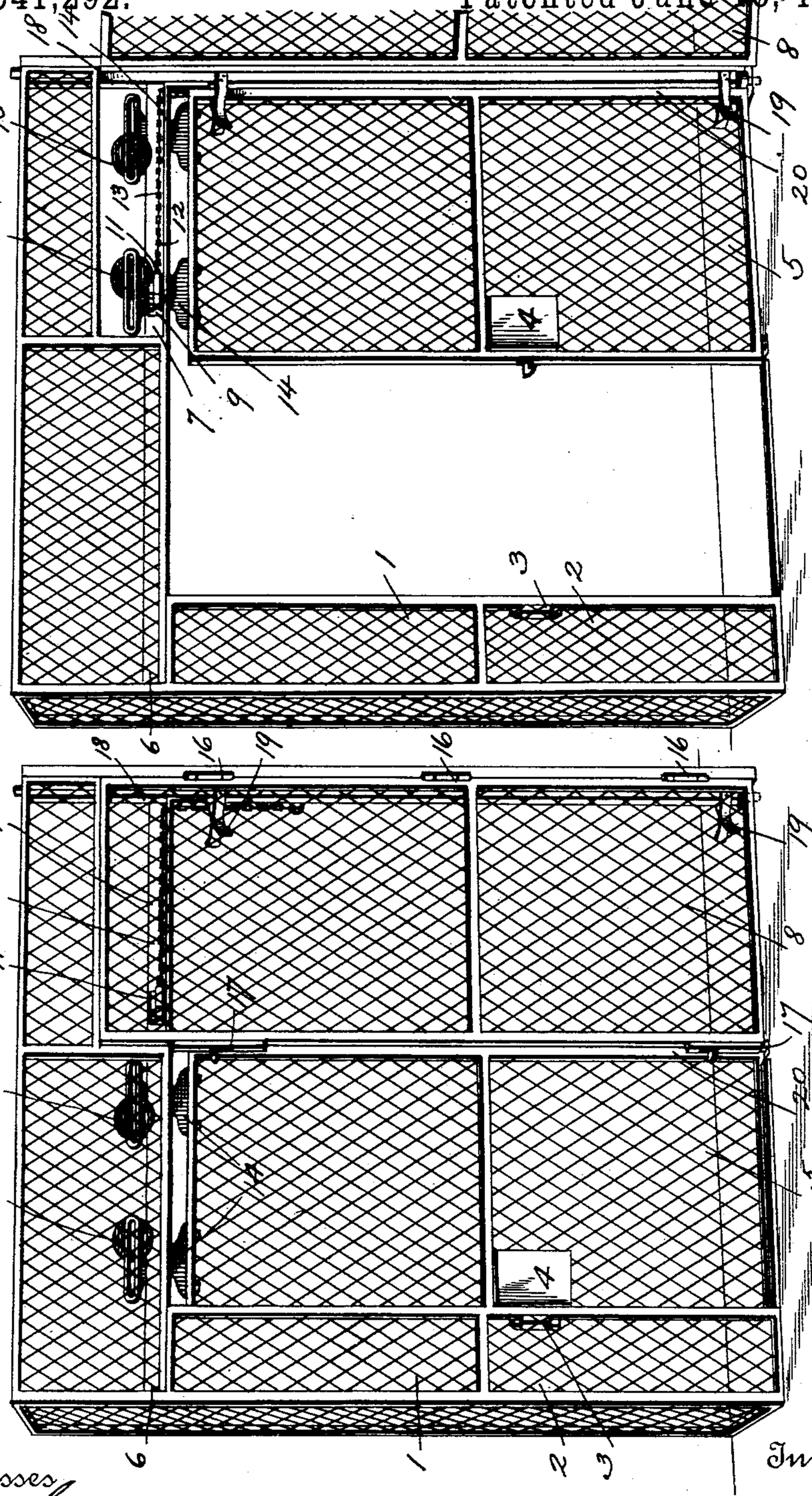

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

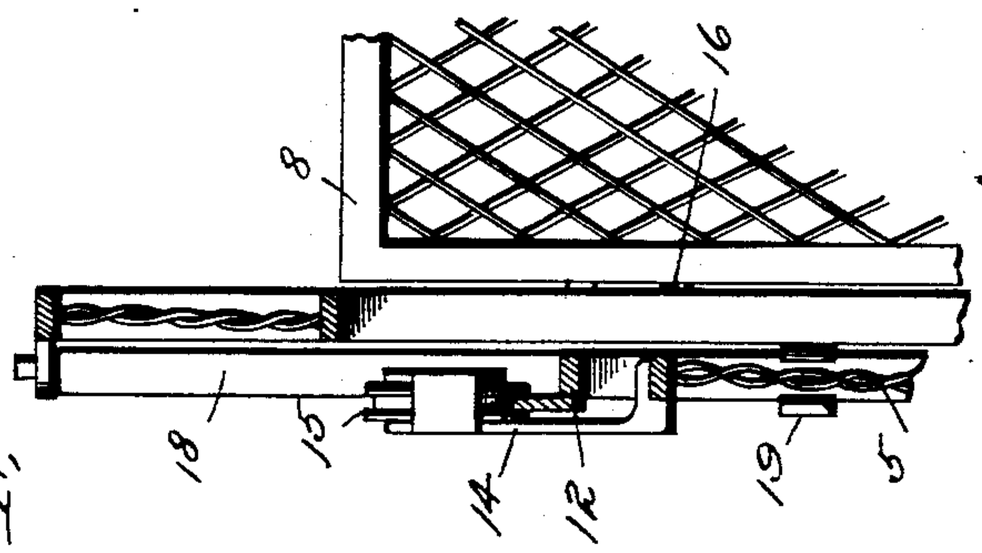


Fig. 5.

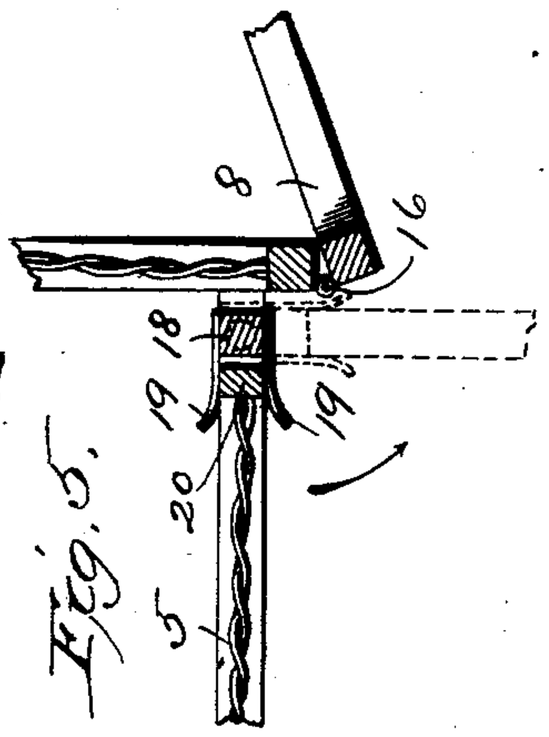
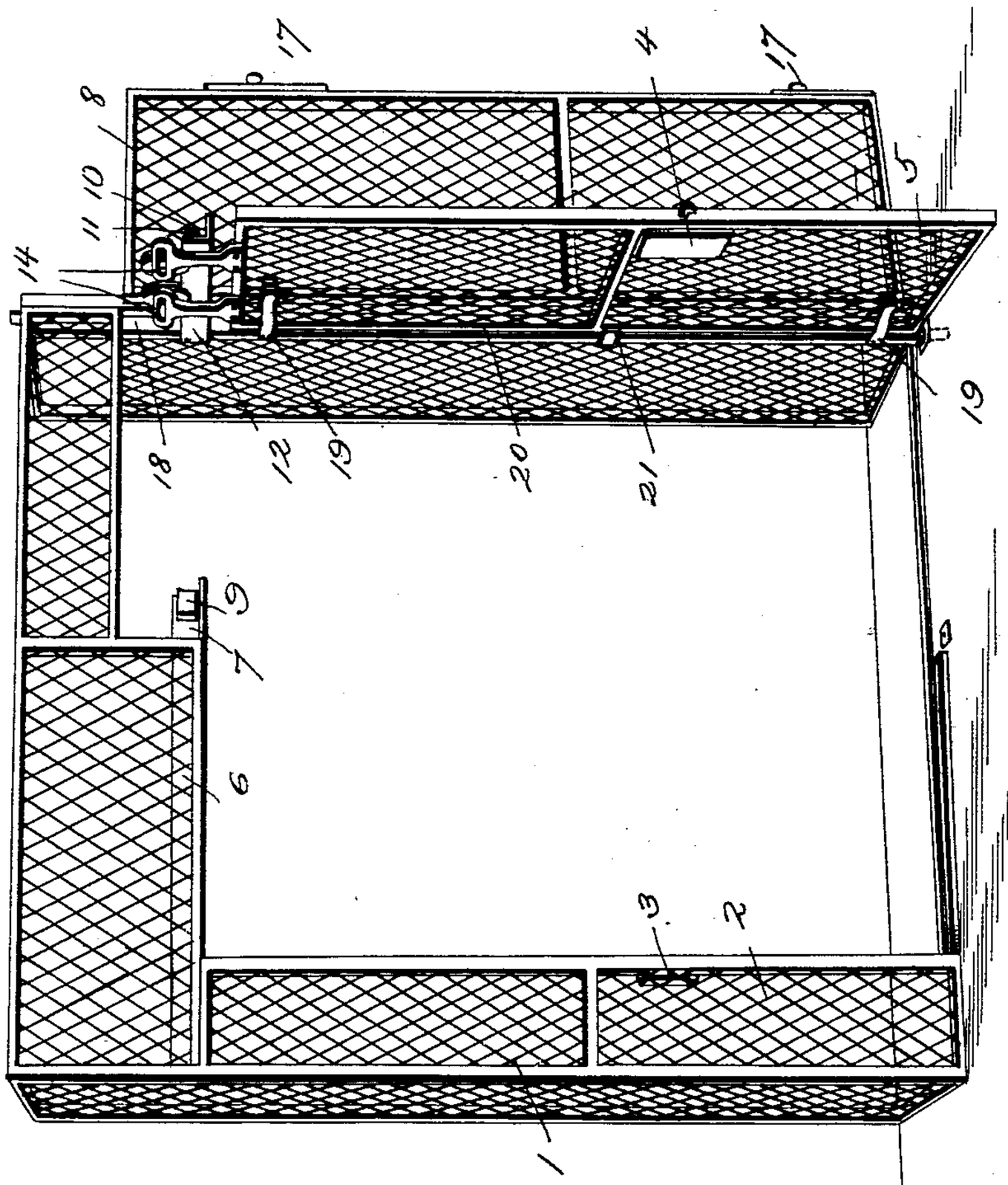


Fig. 3.



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UNITED STATES PATENT OFFICE.

THOMAS F. SANFORD, OF BUFFALO, NEW YORK.

ELEVATOR-DOOR.

SPECIFICATION forming part of Letters Patent No. 541,292, dated June 18, 1895.

Application filed December 19, 1894. Serial No. 532,341. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. SANFORD, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Elevator-Doors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to passenger and freight elevators and consists in improvements, as hereinafter set forth, in the doors and in operating and securing devices therefor.

In the accompanying drawings, Figure 1 represents a perspective view of an elevator-cage having sliding and hinged doors and their operating devices constructed according to my invention, this figure showing, also, the hinged door as opened and the sliding door and its hanger and the track as closed. Fig. 2 represents in front elevation the cage with the respective doors closed. Fig. 3 represents a perspective view of the cage with both doors opened. Figs. 4 and 5 represent detail views of portions of the device.

The object of my invention is to provide the cages or framework inclosing the elevating mechanism of passenger and freight elevators with independent hinged and sliding doors and with mechanism for supporting, sliding, and for swinging the sliding door outwardly and with devices for securing said doors in their respective positions whereby, with the advantages of simplicity of construction, ready and easy manipulation and security in use, provision is made for securing ingress and egress openings of varying width in the cage as desired.

1 represents the reticulated cage or framework within which are contained the platform or carriage and the elevator-operating mechanism.

2 is a vertical panel at the left-hand edge of the front portion.

3 is a keeper to receive the hook-bolt of the lock, 4, of the independent sliding door, 5, when said door is closed and thereby hold said sliding door securely locked.

6 represents a stationary horizontal track located above said panel, 2, and extending at its inner end, as shown at 7, a short distance over the space normally closed by the hinged door, 8, to serve as a stop for said door, 8, said extension, 7, also carrying a keeper, 9, to receive the spring or other bolt, 10, of the lock, 11, carried by the inner end of the hinged or swinging track, 12, to be presently described, and thereby lock the hinged track when closed.

13 represents a chain, or its equivalent, connected with the bolt, 10. By pulling on this chain, said bolt is released when it is desired to open out the swinging track.

To the top of the sliding door, 5, are bolted or otherwise attached, hangers, 14, in which are journaled wheels, 15, having slide bearing on the upper edge of the stationary track, 6. These hangers, it will be observed, extend rearwardly, or inwardly, of the sliding door, 5, so that in the reciprocal movements of said door onto the hinged or swinging track, 12, to open position, and onto the stationary track, 6, to closed position, they travel along the rear faces of the stationary and swinging tracks, respectively, and do not interfere with the locking device for securing the swinging track in closed position. The door, 8, is hinged, as at 16, to the framing so as to be swung entirely open, and at its front edge is provided with a suitable locking device, or devices, as 17, to secure it in closed position.

18 represents a vertical rod or shaft journaled at its upper and lower ends, respectively, in the top and bottom of the framing adjacent to the rear of the hinged door so as to horizontally oscillate, and 19 represents a pair of spring grips or clasps attached to said rock shaft to receive and grip the edge, 20, of the sliding door, 5, when it is slid over the space normally occupied by the hinged door, 8, when closed. When so slid over and onto the hinged track, 12, said door, 5, is opened outward and swings upon its pivotal supports, viz., the hinged track, 12, and the rocking shaft, 18, and is then locked in open position, as shown in Fig. 3, by the hooked catch, 21, secured to the cage framing.

The hinged track, 12, is of right-angle form, and is bolted or otherwise secured at its rear end to the rocking shaft, 18, so as to be turned or opened out with the hinged door, 5, independently of the sliding door or gate, 5, when

it is desired to have only the hinged door open, as indicated in full lines in Fig. 1, or to be opened out in conjunction with said door, 5, when said sliding door is slid and hung upon said track, 12, as shown in Fig. 3.

The mode of operation of my improved doors 5 and 8 will be readily apparent.

When, as shown in Fig. 1, it is desired to use only the hinged door, 8, the sliding door, 5, is, by its hangers, 14, supported upon the stationary track, 6, secured to the cage framework and is locked in said position by the lock, 4. The hinged track, 12, may, in this instance, either remain closed or, to obviate its operating as an obstruction to the passage of persons or articles, it may be swung out on the rocking shaft, 18. When, however, as shown in Fig. 3, it is desired to open both doors 5 and 8, so as to open substantially the entire front of the elevator, the hinged door, 8, is first swung out or opened, the lock, 4, is then released, and the sliding door, 5, is then slid along, through the medium of its wheeled hangers, 14, to suspension on the hinged track 12, and into gripping engagement with the grips, 19. The locking engagement between the two tracks is then released and said door, 5, and track, 12, turned outward upon the shaft, 18, and locked in open position by the hooked catch, 21. The reversal of the above-stated movements, which are very readily and expeditiously accomplished as will be apparent, returns the respective doors to their positions of closure.

What I claim is—

1. In a closure for elevators, an elevated stationary track, a door loosely hung upon said track with capability of sliding therealong, a hinged door, and a track elevated above the sliding door and hinged independently of said hinged door and adapted to receive the sliding door, substantially as and for the purpose set forth.

2. In an elevator, a closure composed of a hinged door, a stationary track immovably secured to one side wall of the cage at a point above the sliding door, a door, wheeled hangers secured to and extending above the top of said door, a supplemental elevated track hinged at a point adjacent to the other side wall of the cage and adapted to be swung outwardly parallel with said side wall and also inwardly in line with the immovable track, and a door hinged to said cage independently of said hinged track, substantially as and for the purpose set forth.

3. In an elevator, a cage, an elevated stationary track secured to the upper portion of and below the top of said cage, an independent door having wheel hangers secured to and extending above the top of said door, whereby said door is hung upon said track with capability of sliding therealong, a vertical rotatable rod having bearing in the top and bottom portions, respectively, of said cage at the end opposite to the stationary track, a track connected with said rod so as to turn therewith and adapted to receive said door, and a door hinged to the cage independently of the hinged track, substantially as and for the purpose set forth.

4. In an elevator, a cage, an elevated stationary track rigidly secured at its outer end to one side of said cage, a vertical rod or shaft having pivotal bearing in the top and bottom, respectively, of said cage framing, an elevated track connected with said pivotal rod or shaft, a locking device connecting the respective tracks, a door independently hung upon said stationary track with capability of sliding therealong and onto the track connected with the pivotal rod or shaft, spring-jawed grips connected with said rocking shaft or rod and adapted to receive and grip the edge of said sliding door, a door hinged to the cage framing, independently of the hinged rod, and securing devices for securing said doors in their respective open and closed positions, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS F. SANFORD.

Witnesses:
LOWELL M. CUMMINGS,
JOS. J. GUNNELL.