

No. 890,717.

PATENTED JUNE 16, 1908.

F. T. SLAYTON.
GRAIN DOOR.

APPLICATION FILED MAR. 23, 1907.

2 SHEETS—SHEET 1.

Fig. 2.

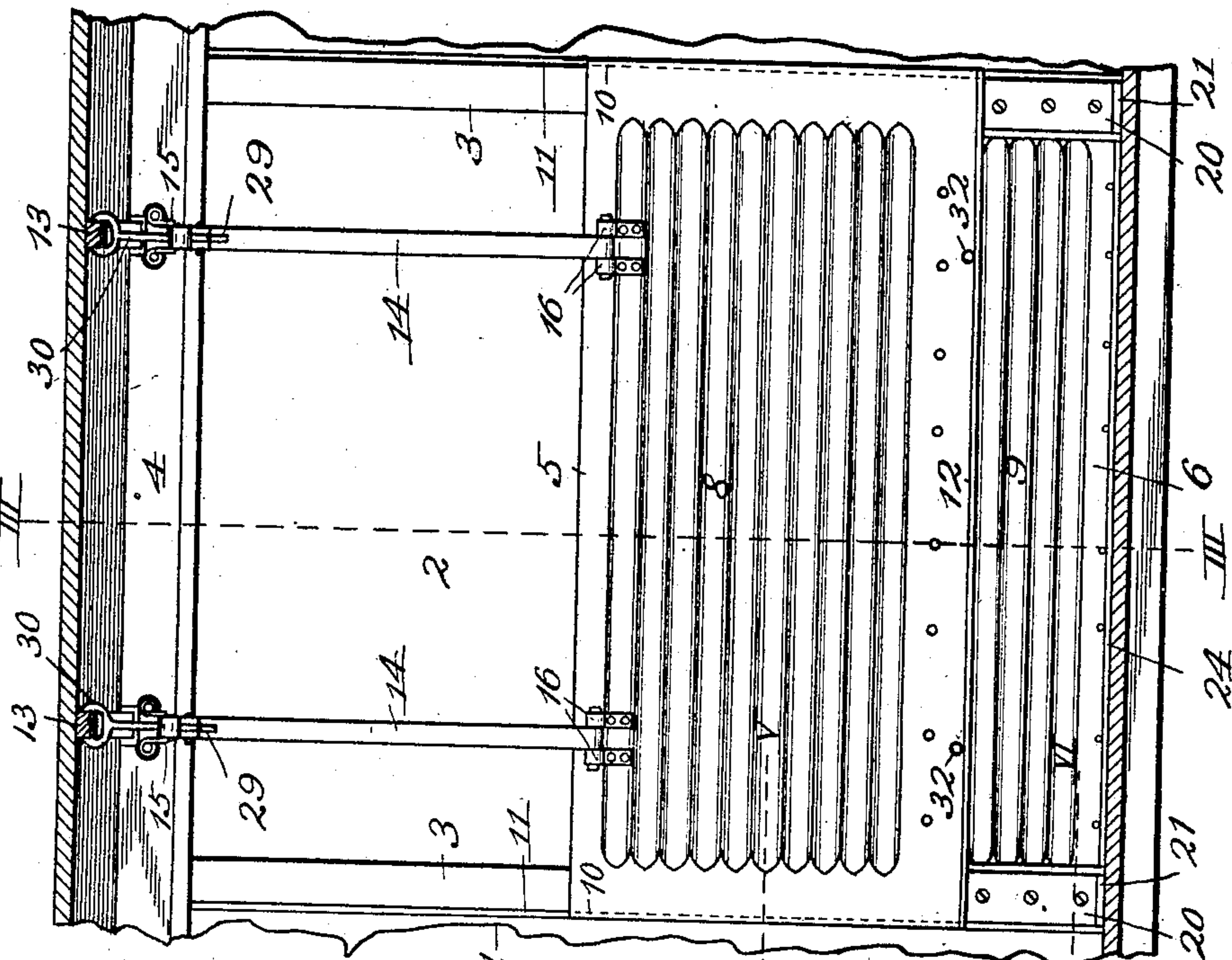
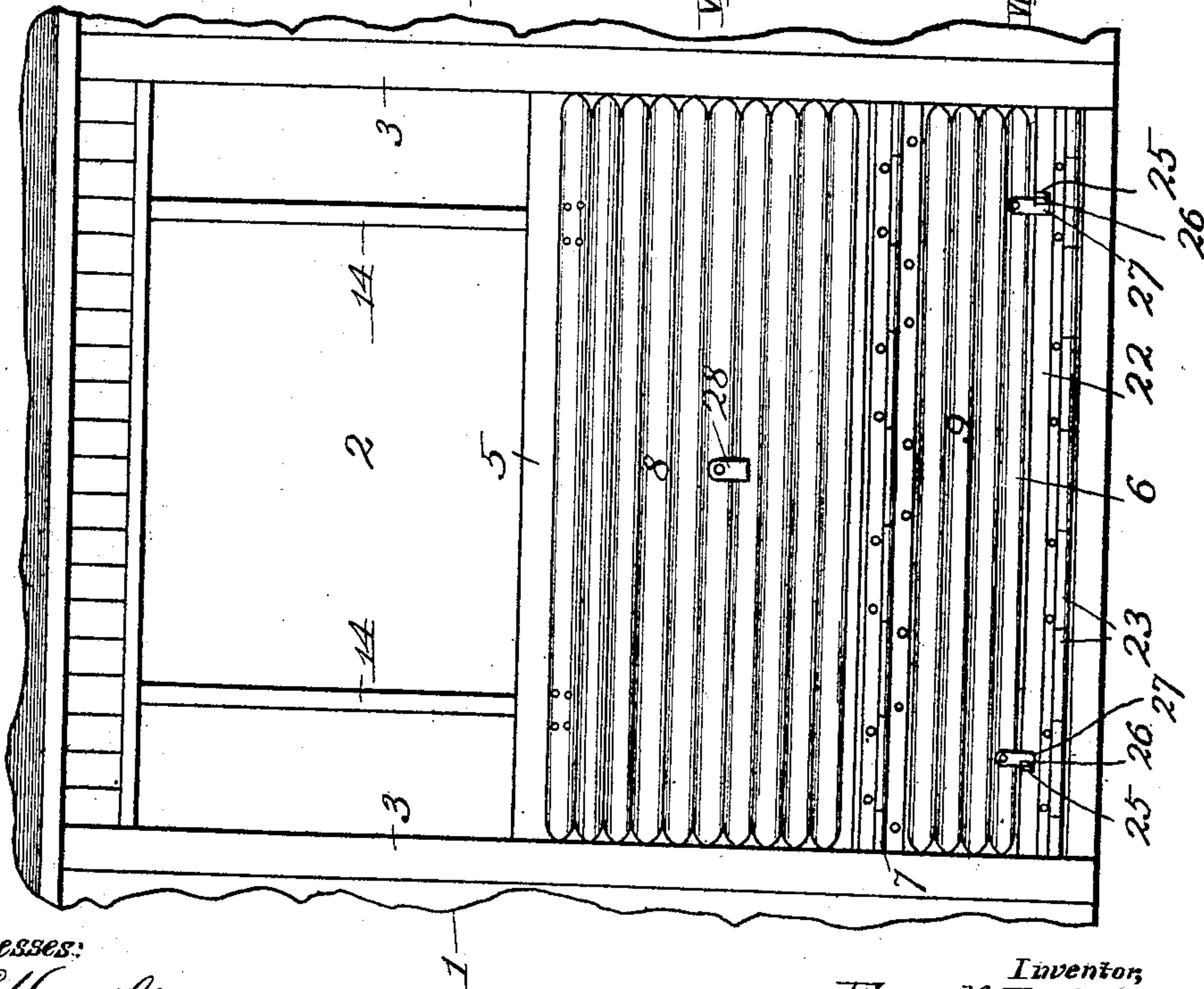


Fig. 1.



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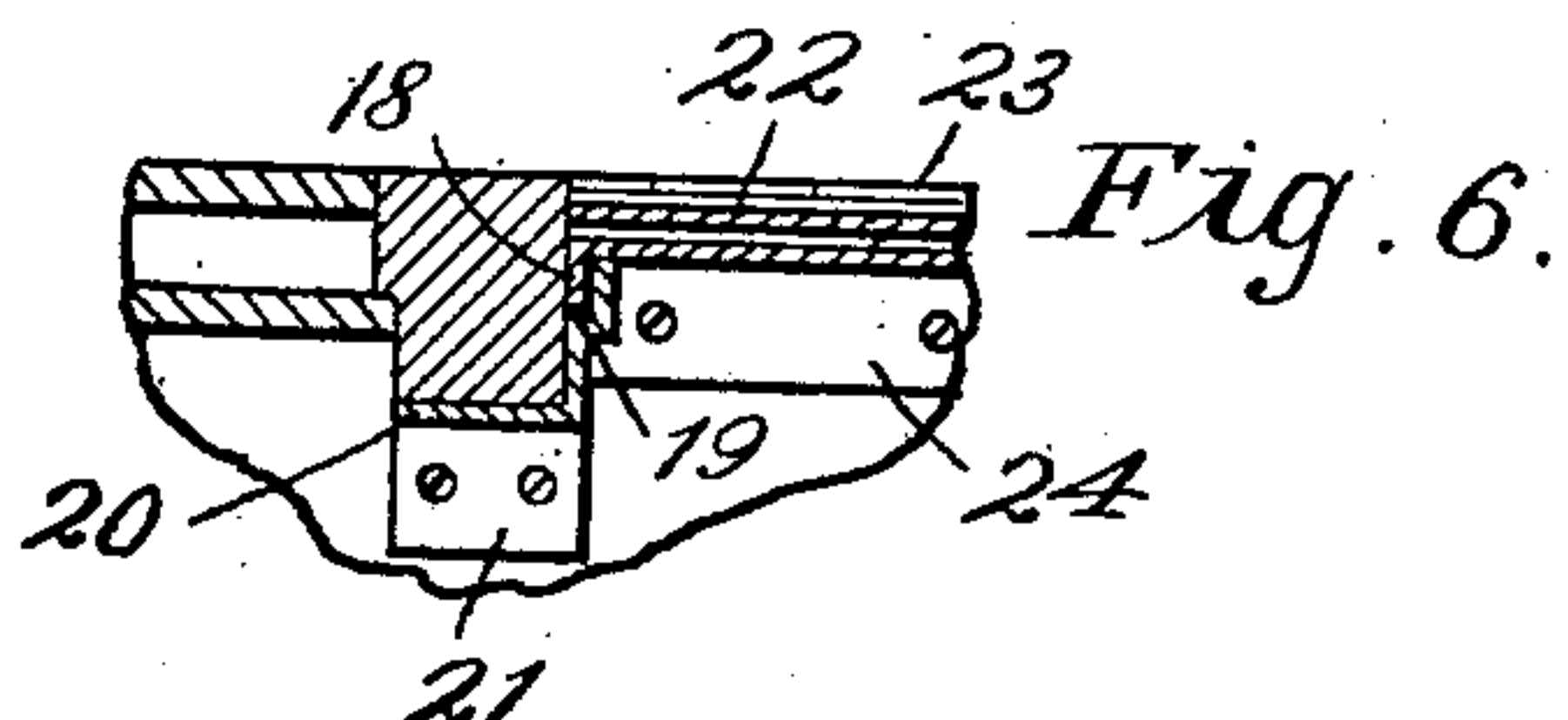
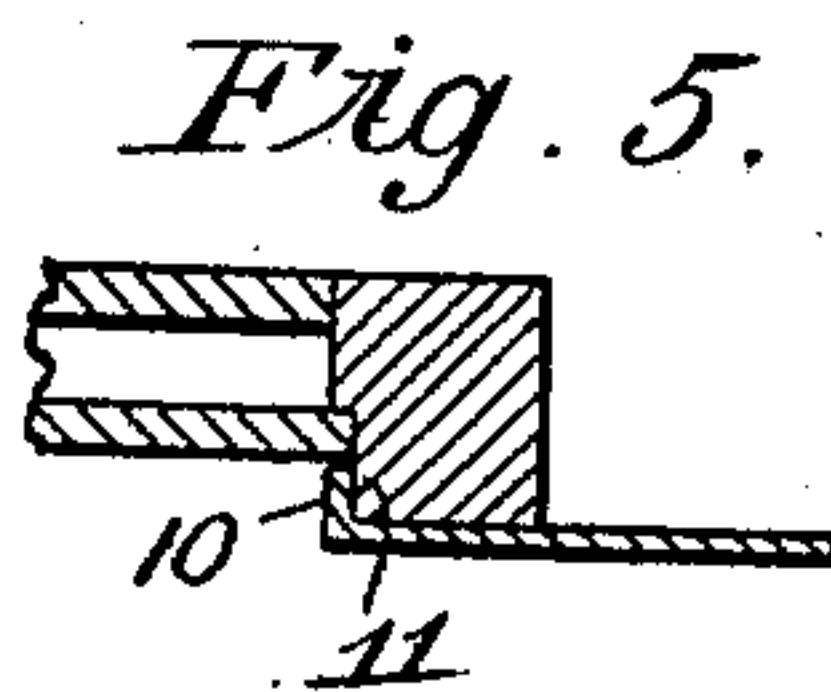
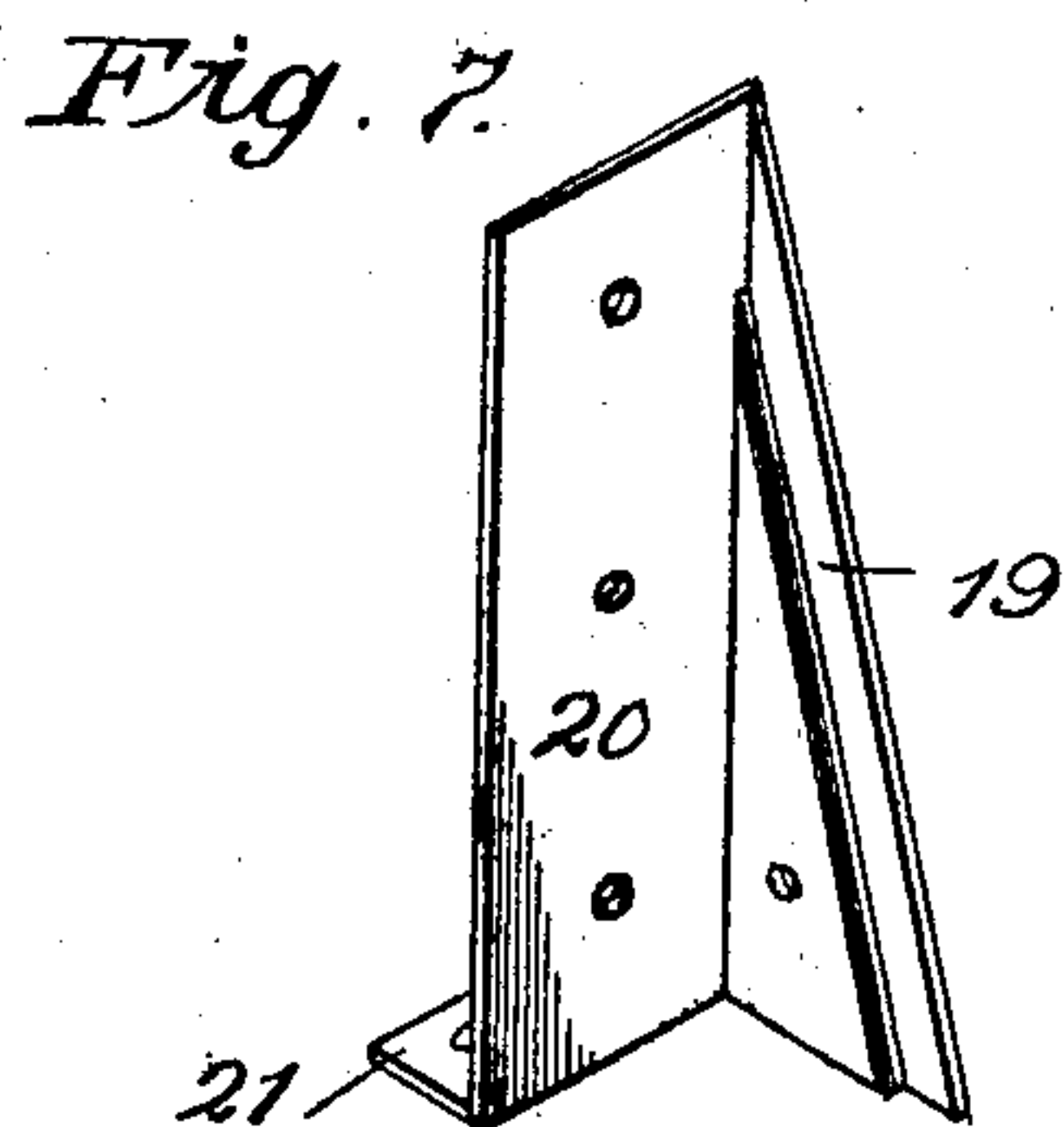
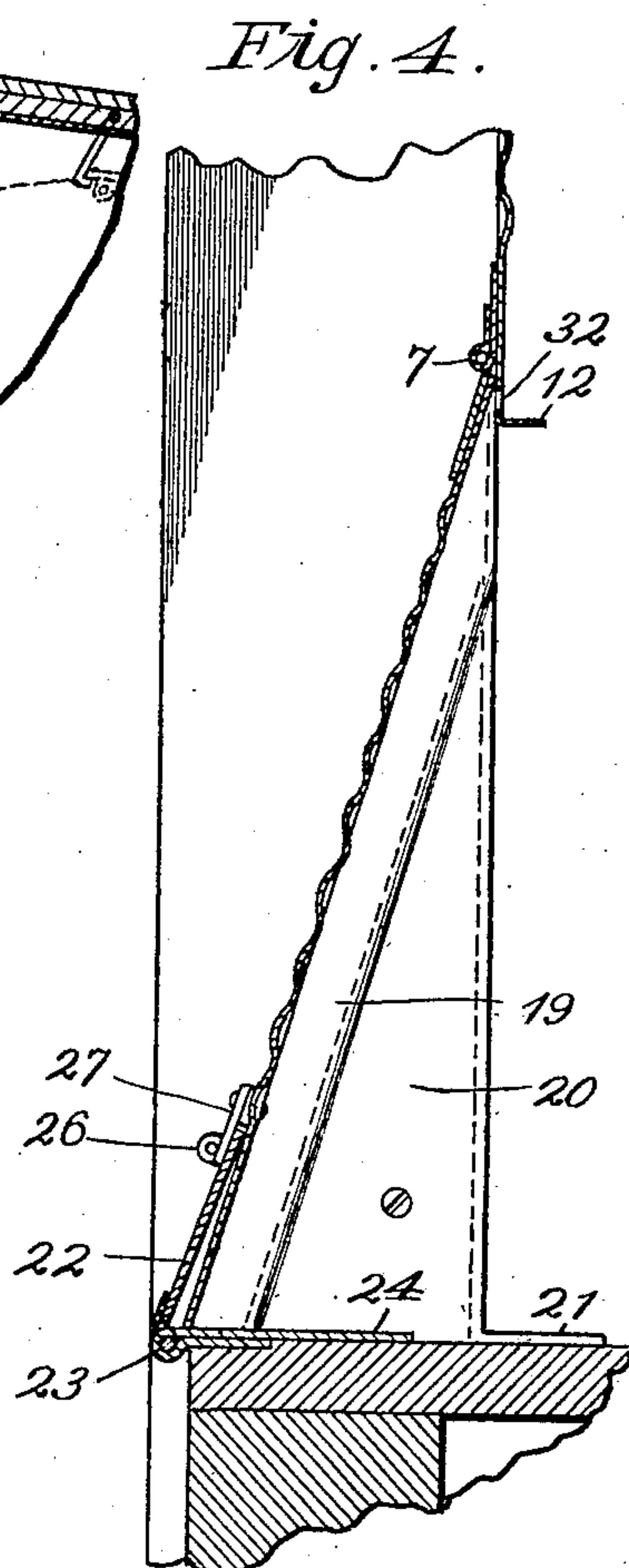
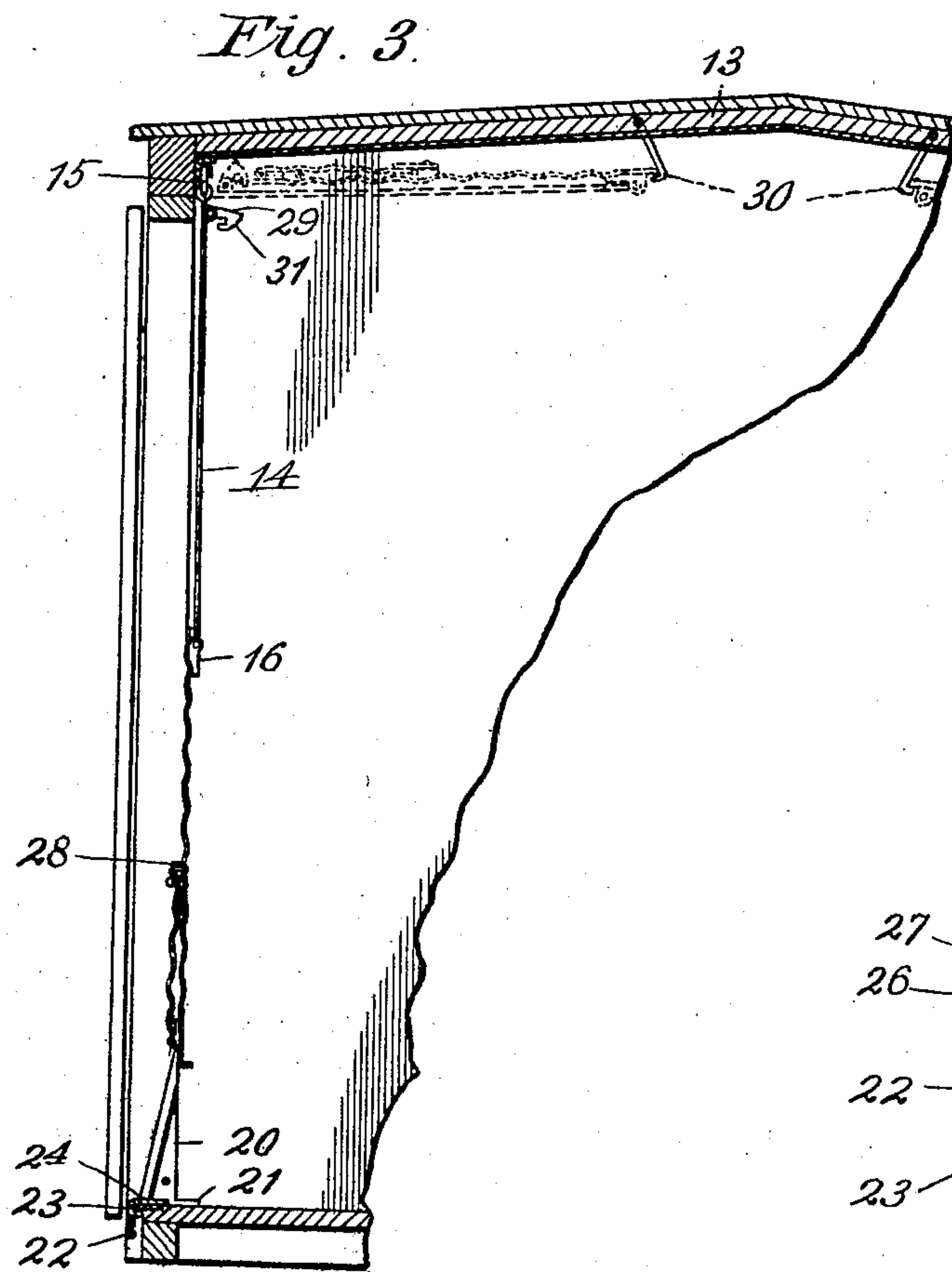
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

FRANK T. SLAYTON, OF ST. JOSEPH, MISSOURI, ASSIGNOR TO BENDER CAR DOOR COMPANY,
OF KANSAS CITY, MISSOURI, A CORPORATION OF ARIZONA TERRITORY.

GRAIN-DOOR.

No. 890,717.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed March 23, 1907. Serial No. 364,054.

To all whom it may concern:

Be it known that I, FRANK T. SLAYTON, a citizen of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Grain-Doors, of which the following is a specification.

My invention relates to improvements in grain-doors for box-cars; and my objects are, first, to provide a grain-tight door; second, to provide a door whereby a large preliminary opening may be had for the discharge of grain at an elevator without said door contacting therewith; third, to arrange the door in such manner that it may be folded beneath the roof of the car and when so folded will not reach half way across the car; fourth to provide simple means for locking the door and preventing leakage of grain at its lower edge, and fifth, to simplify the construction and provide a strong, efficient door whose operation can be readily understood by trainmen so that it may be readily opened or closed without injury thereto.

Referring now to the accompanying drawings, which illustrate the invention, Figure 1 represents a front elevation of my improved grain door in position on a box car. Fig. 2 is a rear elevation of the same. Fig. 3 is a vertical section on line III—III of Fig. 2, with the door partly open in full lines and entirely open in dotted lines. Fig. 4 is an enlarged vertical section of the lower portion of the door on the plane of line III—III. Fig. 5 is a horizontal section on line V—V of Fig. 2. Fig. 6 is a horizontal section on line VI—VI of Fig. 2, and Fig. 7 is a detail perspective of a member utilized in forming a pocket for the lower portion of the door.

1 designates the broken side of a box car having a doorway 2 with door-posts 3 at the sides thereof, and a plate 4 at the top thereof.

My improved door consists of an upper section 5 and a lower section 6 connected by a hinge 7. The upper section extends a slight distance below said hinge to prevent leakage of grain at the joints thereof, and when closed bears against the inner sides of the door-posts. Sections 5 and 6 are reinforced by horizontal corrugations 8 and 9, respectively, which extend almost to the sides thereof, as shown in Fig. 2. Section 5 is further reinforced by outturned vertical side flanges 10, which snugly fit in the rabbeted portions 11 of the door posts 3, see

Fig. 5. It is further reinforced by an inturned horizontal marginal flange 12 extending across the bottom thereof. The door is suspended from two carlines 13 by a pair of arms 14 pivotally secured at their upper and lower ends to loops 15 and hinge members 16, secured, respectively, to carlines 13 and the upper portion of the door.

The lower section 6 of the door is provided at its ends with inturned side flanges 18, which reinforce the same and prevent leakage of grain by snugly fitting within pockets 19 formed in a pair of oblique members 20, secured to the lower portions of the door-posts and provided at their lower ends with inwardly-turned flanges 21 for the reception of screws or bolts whereby they are secured to the floor of the car.

22 designates a sealing strip for locking the door at the bottom and preventing leakage of grain from beneath the lower edge of section 6. Said strip is secured by hinge members 23 to a threshold strip 24, forming part of the floor of the car.

25 designates a pair of staples in the upper portion of the sealing strip and adapted to register with eyes 26 in a pair of turn-buttons 27 pivotally secured to the lower portion of section 6, so that the door may be locked by passing seals or other fastening devices through the staples and the eyes.

To open the door it is only necessary to remove the fastening devices and adjust the turn-buttons 27 upward out of engagement with the sealing strip 22, grain pressure will then force section 6 open so that sufficient grain will discharge to permit the door to be swung up beneath the car-roof. This is accomplished by folding section 6 outward and upward against section 5 and securing it with a turn-button 28 pivoted to section 5, section 5 is then folded inward and upward against arms 14 where it is secured by a pair of pivoted gravity-latches 29, the folded door and latches and arms are then swung on loops 15 beneath the car-roof and secured by hooks 30 depending from the carlines. Latches 29 have beveled ends 31 so that when the lower edge of section 5 contacts therewith it will raise the latches and permit them to engage two holes 32 in the section. By first folding the door upon arms 14 it may be easily swung beneath the roof, and when occupying this position will not reach to the center of said roof and interfere with swinging the

door at the opposite side of the car upwardly out of the way. The sealing strip 22 is narrow so that it may be let down at an elevator, stock-chute, or platform without contacting therewith. By hinging the upper end of section 6 to section 5, instead of to the threshold strip, it is obvious that when opened it will not swing outward far enough beyond the face of the door-posts to contact with the objects above mentioned, and yet leave a sufficiently large preliminary opening through which enough grain may discharge to permit the entire door to be swung up out of the way.

Having thus described my invention, what I claim is:—

1. In a grain car door, the combination with the posts, the threshold, and oblique members secured to the inner faces of the posts at their lower ends; of the door formed in two sections, the uppermost extending inside the posts and the lowermost fitting between them and resting when closed in an inclined position upon said oblique members, a hinge connecting the sections, a sealing strip fitting when closed between the posts, and hinge members connecting it with the threshold and permitting it to open outward and downward, whereby the lower section in opening is permitted to swing outward and then inward between the posts, and then both sections are permitted to swing inward and upward beneath the car roof.

2. In a grain car door, the combination with the posts, the threshold, and oblique members secured to the inner faces of the posts at their lower ends; of the door formed in two sections, the uppermost extending inside the posts and the lowermost fitting between them and resting in an inclined position upon said oblique members when closed, and a hinge connecting the sections, so as to permit the lower section in opening to swing outward and then inward between the posts, and then both sections to swing inward and upward beneath the car roof.

3. In a grain car door, the combination with the vertical posts and threshold, and a pair of oblique members secured upon the threshold and to the lower portions of the posts and having inclined pockets extending along the inner faces of said posts from their inner sides to the outer corner of the threshold; of the door formed in two sections, the uppermost extending inside the posts and the lowermost fitting between them and having side flanges engaging said pockets when it is closed and stands in an oblique

position, connections between the sections, and means for permitting them to swing in opening and closing.

4. In a grain car door, the combination with the posts having rabbets on their inner edges, and oblique members secured on the threshold opposite the lower ends of the posts and having pockets in their outer faces; of the door formed in two sections, the uppermost extending inside the posts and having outturned side flanges to engage said rabbets, and the lowermost being hinged to the uppermost and narrower than the distance between the posts, and having inturned side flanges to engage said pockets, means for locking the lower section closed and sealing the bottom of the door, and a pivotal support for sustaining the upper section in position or permitting both sections to swing inward and upward beneath the car roof.

5. In a grain car door, the combination with the posts having rabbets on their inner edges, and oblique members secured on the threshold opposite the lower ends of the posts; of the door formed in two sections, the uppermost extending inside the posts and having outturned side flanges to engage said rabbets, and the lowermost being hinged to the uppermost and filling the distance between the posts, and resting on the inclined faces of said member when closed, a sealing strip hinged to the threshold and detachably engaging the lower section for locking the latter closed and sealing the bottom of the door, and a pivotal support for sustaining the upper section in position or permitting both sections to swing inward and upward beneath the car roof.

6. In a grain car door, the combination with the car body having a doorway, swinging latches pivoted above the same, hooks within the roof, and a sealing strip at the threshold of the doorway; of a door comprising upper and lower sections hinged together, the latter opening outward and sealed by said strip when closed, and arms pivoted to the roof and hinged to the upper edge of the upper section so that the latter may be swung inward and upward to engage said latches and then both sections and the latches and arms may be swung inward and upward to engage said hooks.

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

FRANK T. SLAYTON.

Witnesses:

CYRUS O. FRENCH,

F. G. FISCHER.