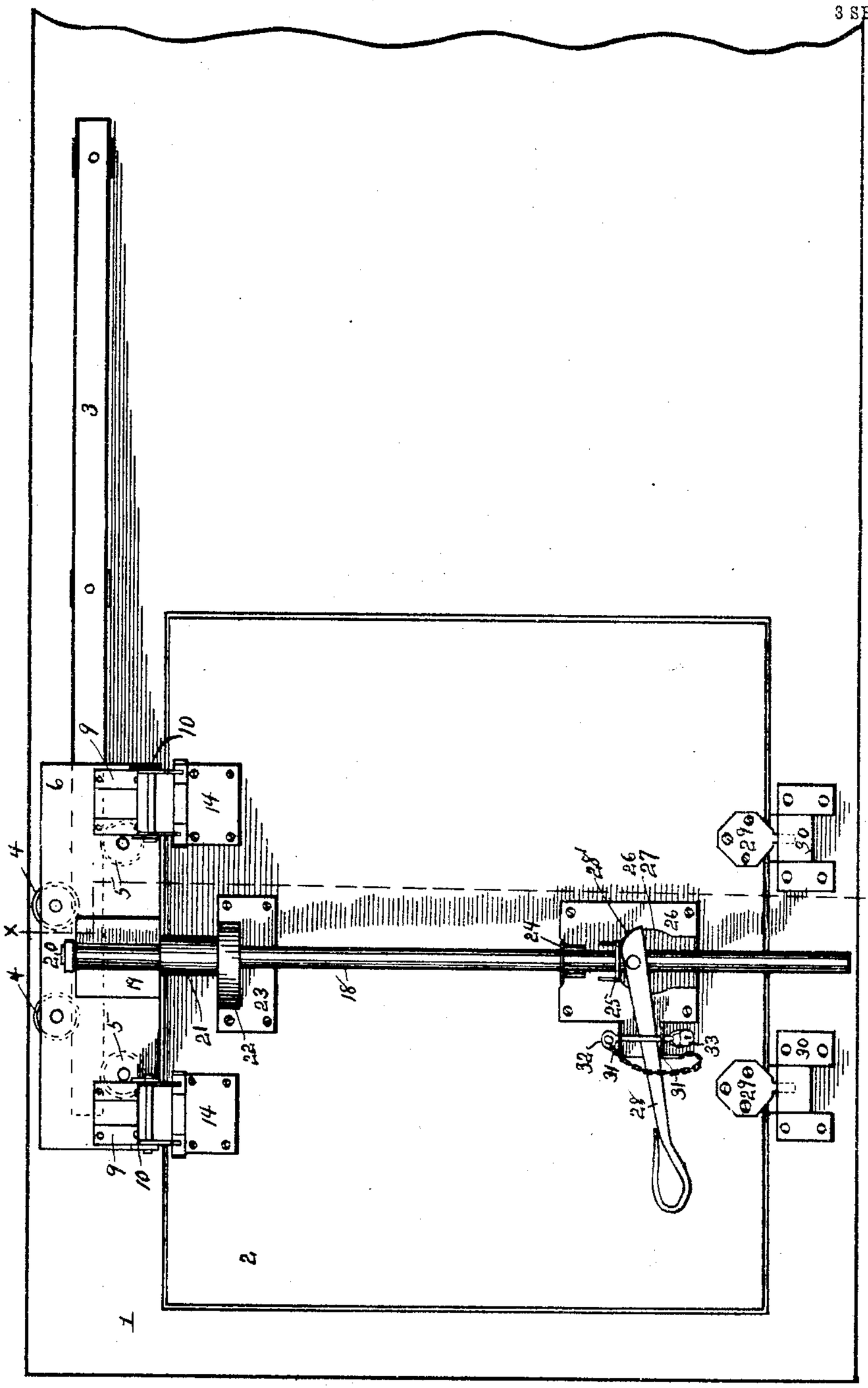
No. 785,800. PATENTED MAR. 28, 1905.

O. S. DAVIS.

CAR DOOR.

APPLICATION FILED NOV. 15, 1904.

3 SHEETS—SHEET 1.



Witnesses
J. Brent Clarke.
B. C. Trott

Inventor
Ovid S. Davis
By John L. Dyspie
Attorney

No. 785,800. PATENTED MAR. 28, 1905.

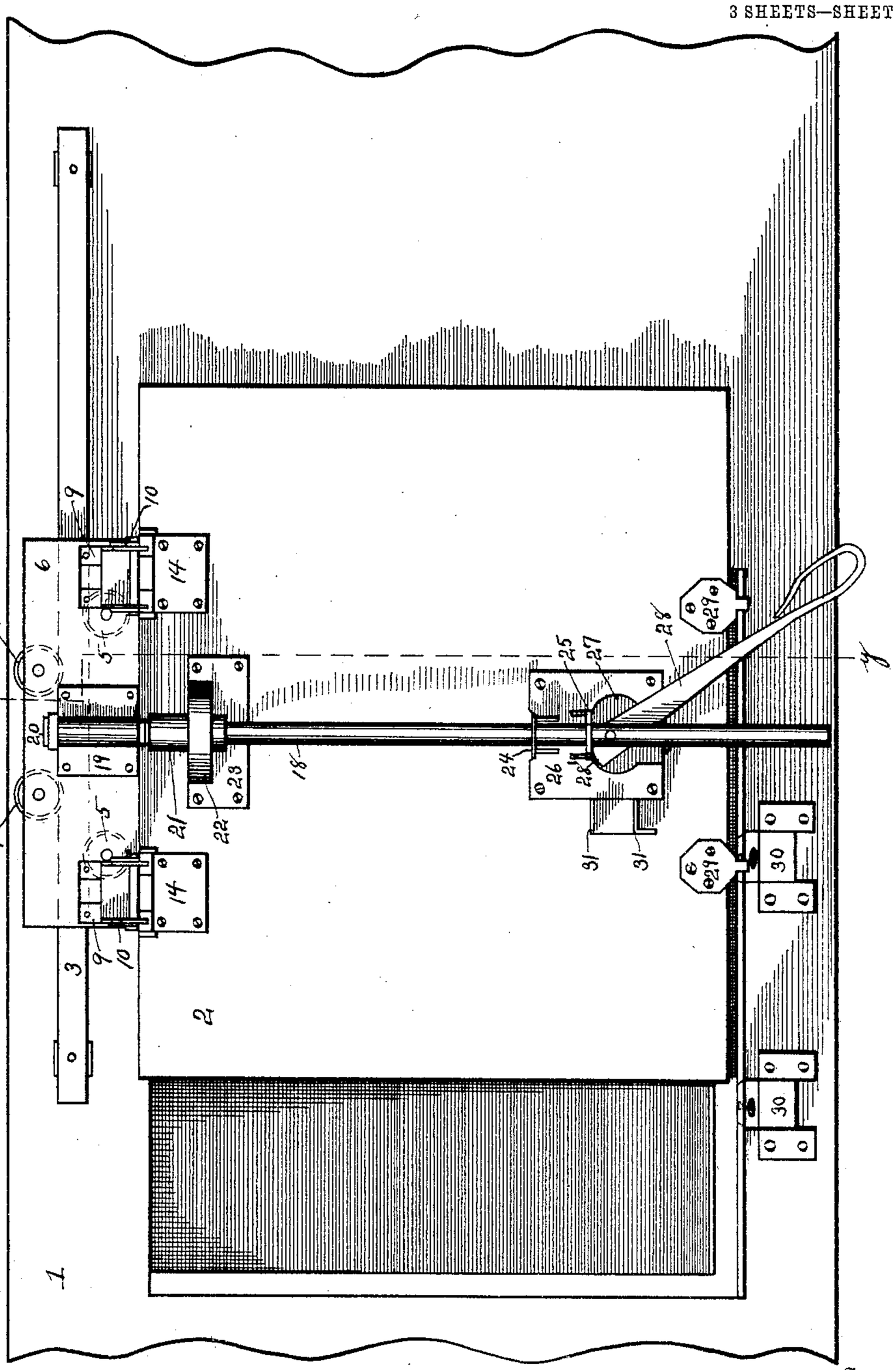
O. S. DAVIS.

CAR DOOR.

APPLICATION FILED NOV. 15, 1904.

3 SHEETS—SHEET 2.

FIG. II.



Inventor

Witnesses

J. Brunt Clarke.

B. C. Trott

Orrid S. Davis

By

Edmund Dwight

Attorney

No. 785,800. PATENTED MAR. 28, 1905.

O. S. DAVIS.

CAR DOOR.

APPLICATION FILED NOV. 15, 1904.

3 SHEETS—SHEET 3.

Fig. V.

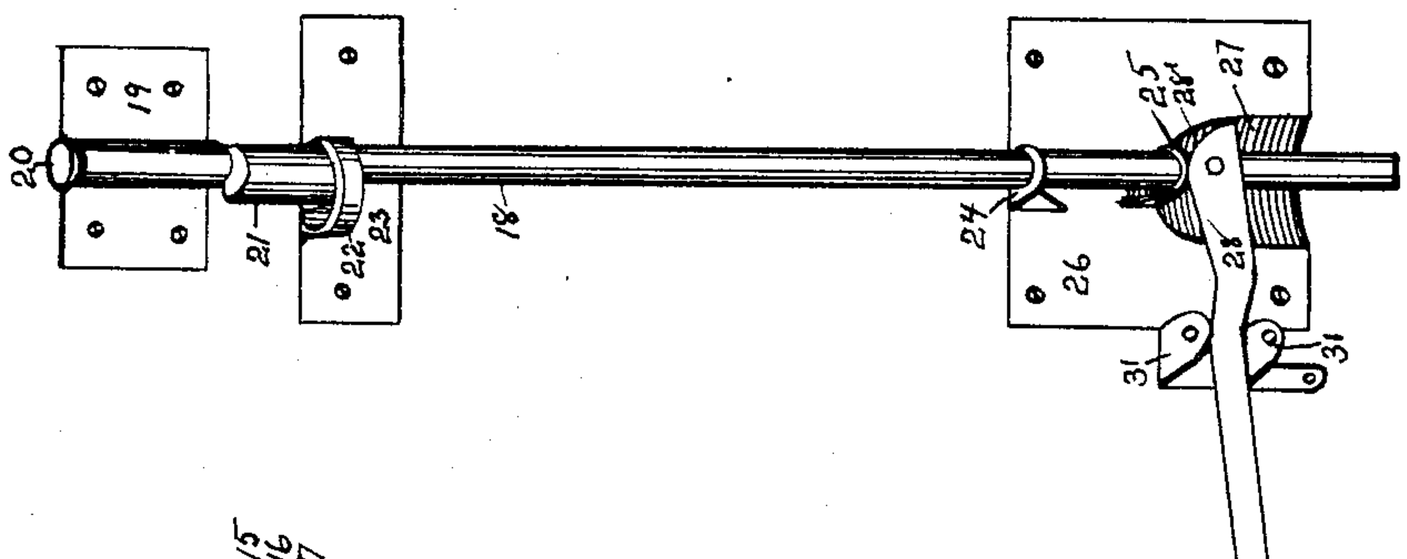


Fig. VI.

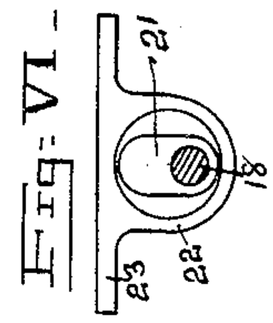


Fig. IV.

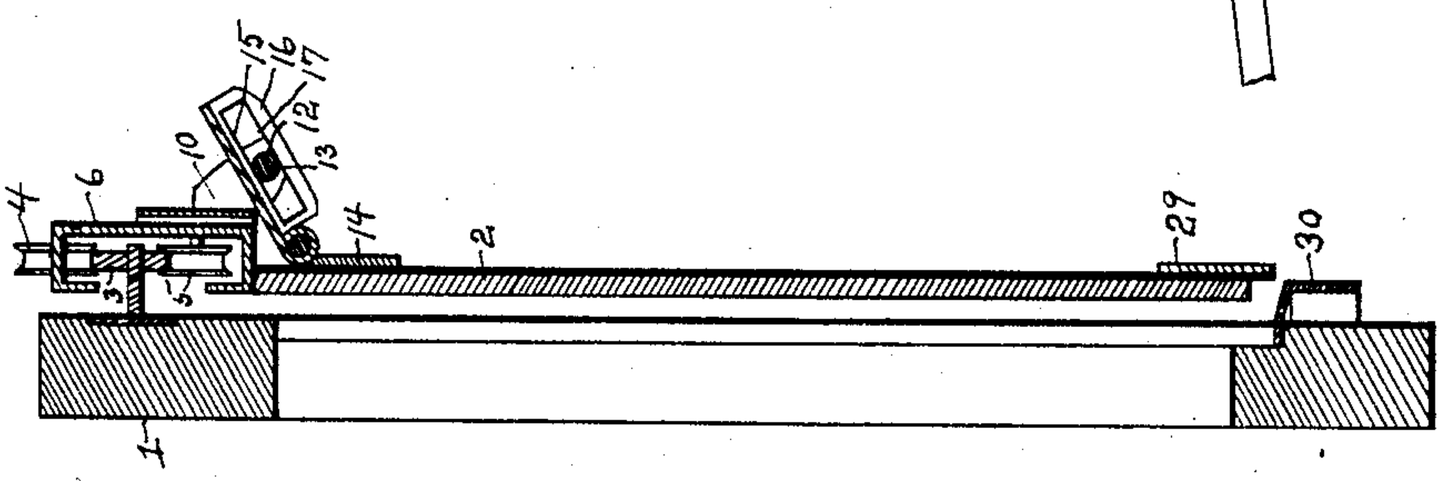
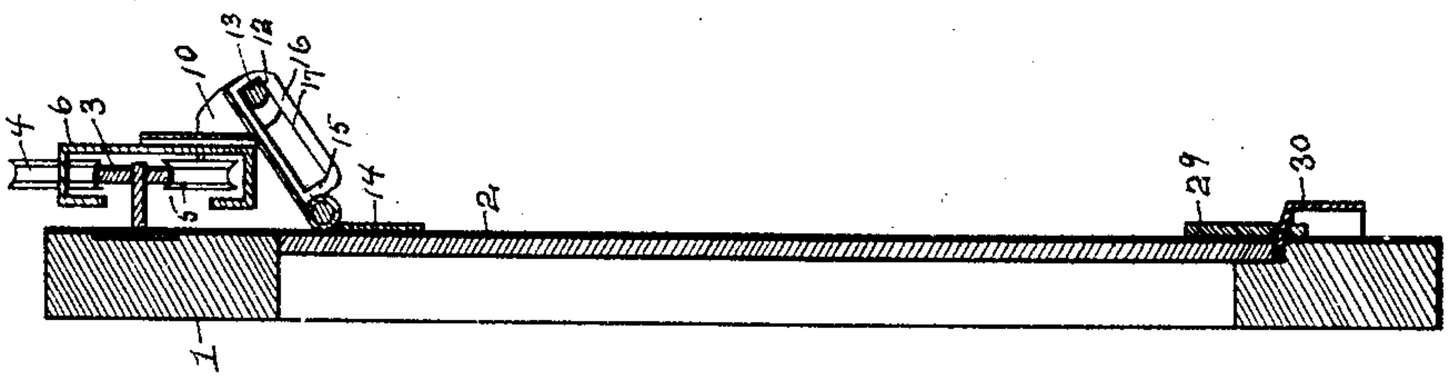


Fig. III.



Witnesses
J. Brent Clarke.
B. C. Trott

Inventor
David S. Davis
By John S. Duffield
Attorney

No. 785,800. Patented March 28, 1905.

UNITED STATES PATENT OFFICE.

OVID S. DAVIS, OF WYNNE, ARKANSAS.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 785,800, dated March 28, 1905.

Application filed November 15, 1904. Serial No. 232,836.

To all whom it may concern:

Be it known that I, OVID S. DAVIS, a citizen of the United States, residing at Wynne, in the county of Cross and State of Arkansas, have invented new and useful Improvements in Car-Doors, of which the following is a specification.

My invention has relation to improvements in the construction of sliding doors for box-cars.

The object of my invention is to provide a simple and economical means for moving said door sidewise and when closed locking the same in a safe and substantial way, the fit being so complete as to prevent water or fire from entering the car.

In the accompanying drawings, Figure 1 is a side elevation of a box-car with my invention attached thereto, the door closed. Fig. 2 is a side elevation of a box-car, showing my invention attached thereto, the door being partly open. Fig. 3 is a vertical sectional view on the line X X of Fig. 1, door closed. Fig. 4 is a vertical view on the line Y Y of Fig. 2, door partly open. Fig. 5 is a vertical perspective view of the operating-rod with its bearings and attachments. Fig. 6 is an end view of a plate and loop in which the operating-rod and raising-arm turn.

My invention is described as follows:

The numeral 1 represents the car-body, and 2 the door. The edges of the car casing and door are so matched as to bring the exterior of the door when closed flush with the side of the car. A horizontally-arranged track 3 is secured to the side of the car above the door-casing. Adapted to run on the said track are grooved wheels 4. When the door is opened, the said grooved wheels run and bear on the upper edge of the track 3, thereby supporting the door; but in order to prevent the door from jumping or otherwise leaving the track when being moved I have provided other grooved wheels 5. When moving the said door, the said grooved wheels 5 are brought to bear against the lower edge of the track 3, thereby preventing the door from moving upwardly or leaving the track. The said grooved wheels 4 and 5 are secured within and protected by a casing 6. Secured to the outer lower ends of the said casing 6 are supports 9, having at their lower outer ends upwardly-extending projections 10, which are perforated, as at 12, for the reception of a bolt 13, the purpose of which will be hereinafter more fully explained.

Secured at the upper end of my improved car-door are two hangers 14, and hinged to the upper ends of the upper ends of the said hangers 14 are sliding hinges 15, said hinges having at their outer sides upwardly-extending flanges 16, having elongated slots 17 therein, for the purposes hereinafter set forth.

As a means for operating my improved door I have provided the same with a vertically-arranged operating-rod 18, the upper end of which is journaled to the said casing 6 by means of a bearing 19. At the extreme upper end of the said operating-rod 18 is a head 20 to prevent the said rod from slipping down. Near the upper end of the said operating-rod an arm 21 is formed thereon. This arm works in an upwardly-extending U-shaped loop 22 of a plate 23, secured to the face of the door. The said operating-rod extends downwardly through two braced eyes 24 and 25, rising from a plate 26, having a depression 27 therein secured to the face of the door near its lower end. Pivoted to the said operating-rod near its lower arm is a lever 28, the pivoted end of the said lever being beveled, as at 28′.

Secured at the lower end of the door are lock-bolts 29. When the door is closed, the said lock-bolts enter keepers 30, which are secured to the lower end of the car-body.

To open the door, the lever 28 is swung outward from the position as shown in Fig. 1. In the turning of the lever the arm 21 of the operating-rod 18 will bear against the U-shaped loop 22 of the plate 23, thereby throwing the top of the door outwardly. When in this position, the door extends slightly in an incline plane, the inner surface of the top of the door being in a parallel with and just beyond the plane of the outer surface of the side of the car. (See Fig. 2.) The operation of the lever 28 causes the elongated slots 17 of the sliding hinges 15 to ride upwardly on the bolt 13 of the supports 10. This mech-

anism causes the opening of the door to be more easily and smoothly accomplished. In order to then release the lock-bolts 29 from the keepers 30, I turn the lever down, (see Fig. 2,) and this operation will raise the door sufficiently to release the said lock-bolts from the said keepers, when the lower end of the door will swing sufficiently outward to cause the inner surface of the door to be on a parallel with the face of the car-body. When in this position, the door is ready to be slid to the right to uncover the door-opening. When the door is closed, the free end of the lever 28 is locked between two perforated flanges 31 by a pin and chain 32, or instead of using the lock 33 a seal may be used.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a sliding door, a horizontally-arranged track secured to the side of the car above the door-casing; grooved wheels adapted to run on said track, the said wheels being secured within, and protected by a casing; two supports, secured to the outer lower edge of the said casing, and having at their outer lower ends outwardly-extending projections, perforated for the reception of bolts; two hangers secured to the upper end of the car-door; slotted sliding hinges, hinged to the upper end of the said hangers, and having elongated slots therein; grooved wheels journaled in said casing, and adapted to run against the lower edge of said track; a vertically-arranged operating-rod, journaled at its upper end to the said casing; an arm secured to said rod, and adapted to throw said door outwardly, the said rod extending downward and passing through two braced eyes secured to a plate having a depression formed therein, and a lever pivoted to the said operating-rod near its lower end, substantially as shown and described and for the purposes set forth.

2. In a sliding car-door the combination of a track 3, secured to the outer face of the car and above the door-facing; grooved wheels 4, journaled in a casing 6, and running on the upper edge of said track; grooved wheels 5, journaled in said casing and running against the lower edge of said track; projections 10, extending outwardly from the lower edge of said casing, and provided with perforations for the reception of bolts 13; hangers 14, secured to the upper end of the car-door; slotted sliding hinges 15, hinged to said hangers, said hinges sliding on said bolts 13, by means of their slots 17; a loop 22, secured to the car-door 2; a plate 26, bearing eyes 24 and 25; a rod 18, hinged to said casing and said door, and passing through said loop 22, and brace-eyes 24 and 25; arm 21, extending from said rod and working in loop 22; a lever 28, hinged near the lower end of said rod, its beveled end working against eye 25, and adapted to raise the door when the free end of the lever is pressed down, said lever adapted to be locked in place, substantially as shown and described and for the purposes set forth.

3. In combination with a sliding car-door, a horizontally-arranged track secured to the side of the car, above the door-casing; grooved wheels adapted to run on said track, said wheels being secured within, and protected by a casing; two supports, secured to the outer lower edge of the said casing, and having at their outer lower ends outwardly-extending projections perforated for the reception of bolts; two hangers secured to the upper end of the car-door, and slotted sliding hinges, hinged to the upper end of the said hangers, and to the lower ends of said supports, substantially as shown and described and for the purposes set forth.

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

OVID S. DAVIS.

Witnesses:
T. A. BEDFORD, Jr.,
S. H. OSGOOD.