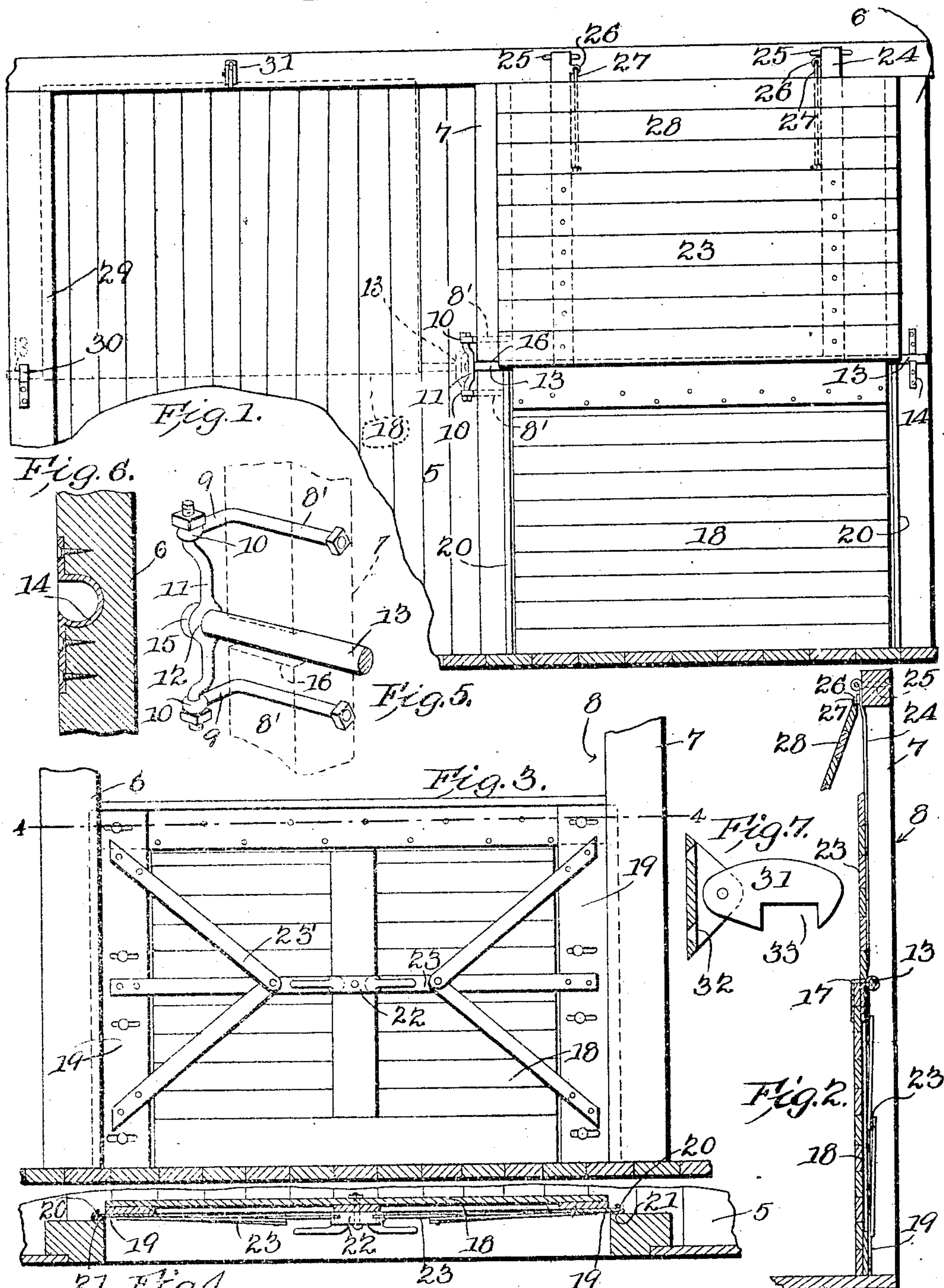


No. 882,286.

PATENTED MAR. 17, 1908.

W. L. AURAND.  
GRAIN CAR DOOR.  
APPLICATION FILED MAR. 26, 1906.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM L. AURAND, OF MILFORD, ILLINOIS.

## GRAIN-CAR DOOR.

No. 882,286.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed March 26, 1906. Serial No. 308,196.

*To all whom it may concern:*

Be it known that I, WILLIAM L. AURAND, a citizen of the United States, residing at Milford, in the county of Iroquois and State of Illinois, have invented a new and useful Grain-Car Door, of which the following is a specification.

This invention relates to grain car-doors and has for its object to provide a door capable of being swung outwardly to open position and which may also be swung laterally and upwardly to inoperative position at the top of the car.

A further object of the invention is to provide a door comprising a plurality of independently movable members one of which is formed with a pivoted section to permit the contents of the car to be conveniently inspected.

A further object of the invention is to provide novel means for mounting the lower door section and means for locking said section in closed or operative position.

A still further object of the invention is to generally improve this class of devices so as to increase their utility, and durability and efficiency as well as to reduce the cost of manufacture.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, and illustrated in the accompanying drawings.

In the accompanying drawings forming a part of this specification: Figure 1 is a side elevation of a portion of the interior of a car. Fig. 2 is a transverse sectional view taken on the line 2—2 of Fig. 1. Fig. 3 is a front elevation of the lower door section. Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 3. Fig. 5 is a perspective view of the bar supporting brackets and connecting links. Fig. 6 is a longitudinal sectional view showing one of the bearing plates or sockets for the reception of the supporting bar. Fig. 7 is a side elevation partly in section of the catch for locking the free end of the lower door section in elevated position.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved door may be used in connection with different styles of cars and by way of illustration is shown applied to a grain-car of the ordinary construction in

which 5 designates the body of the car provided with spaced side posts or jambs 6 and 7 defining a door receiving opening 8.

Secured to the posts 7 are spaced supporting brackets 8' preferably in the form of bolts the free ends of which there bent laterally as indicated at 9, are provided with terminal loops 10 adapted to receive the threaded extensions of a connecting link or bolt 11. The intermediate portion of the bolt 11 is curved or bowed inwardly as shown and provided with a centrally disposed opening or recess 12 adapted to receive one end of a door supporting member or bar 13, the opposite end of which is detachably seated in a socket or wear plate 14 fitted within an opening in the post 6. The bar 13 extends transversely across the door receiving opening 8 and is provided with an enlarged head 15 adapted to engage the bolt 11 and prevent longitudinal movement of said bar, there being a recess 16 formed in the adjacent surface of the post 7 for the reception of the bar, as shown.

Depending from the bar 13 and secured thereto in any suitable manner as by strap irons 17 is the lower section 18 of the grain-car-door. Mounted for sliding movement on each end of the section 18 are sliding plates 19 adapted to engage locking grooves or flanges 20 of bearing plates 21, the latter being bolted or otherwise rigidly secured to the posts 6 and 7 as shown. The plates 19 are moved into and out of engagement with the locking flanges 20 by means of a hand operated lever 22 operatively connected to the plates through the medium of links 23' so that by rotating the lever 22 in one direction the plates 19 will be withdrawn to permit the section 18 to be swung outwardly to open position and when the handles are rotated in the opposite direction the plates will engage the locking flanges and thereby retain the door in closed position.

The upper section 23 of the door is provided with strap hinges 24 which engage staples or bolts 25 secured to the upper cross-beam of the door opening, said strap hinges 24 being provided with laterally extending lugs 26 in which are pivotally mounted rods 27 having their opposite ends operatively connected to a movable section 28 carried by the member 23. By having the member 23 formed with the movable section 28 the latter may be swung inwardly when it is desired to inspect the contents of the car with-



out the necessity of opening either section of the door.

Arranged within the car and secured to one of the vertical studs or posts 29 is a plate or bracket 30 preferably arranged in alignment with the socket 14 and adapted to receive the free end of the bar 13 when said bar is moved laterally to inoperative position against the interior walls of the car. As a means for supporting the lower section 18 of the door in elevated position there is provided a catch 31 pivotally mounted on a bracket 32 secured to the upper longitudinal beam of the car and provided with a recess 33 adapted to receive the free edge of the section 18, as best shown in Figs. 1 and 7 of the drawings.

The operation of the device is as follows:

When it is desired to discharge a portion of the contents of the car the locking plates are moved to inoperative position by rotating the handle 22 and the lower door section 18 swung laterally to open position beyond the side posts of the door. The upper section 23 may then be swung inwardly towards the top of the car and supported in elevated position by a suitable hook or catch, not shown.

When it is desired to expose the door opening the operator grasps the free end of the bar 13 and moves the same laterally in the arc of a circle into engagement with the bracket 30, the section 18 being then swung upwardly until the free edge of said section engages the recess in the catch 31 thus supporting the door with the locking mechanism next to the side of the car as indicated in dotted lines in Fig. 1 of the drawings.

By having the bolt swiveled in the supporting brackets and the supporting bar mounted for rotation in the bolt, the bar is free to swing laterally within the car and the door to swing upwardly to inoperative position in the manner before described.

Having thus described the invention what is claimed is:

1. The combination with a car having a plurality of spaced side posts two of which are spaced apart to form a door opening, spaced brackets secured to one of the door posts on the opposite side thereof from the door opening, a link pivotally mounted in said brackets, there being a transverse recess

formed in the bracket carrying post and sockets counter sunk in the adjacent posts and disposed in horizontal alinement with the transverse recess, a horizontally disposed rod seated in the transverse recess and one of said sockets and having one end thereof secured to the link, a door depending from the rod and forming a closure for the door opening, the free end of said rod being movable in a horizontal plane in engagement with the other socket, thereby to permit the door to be swung upwardly to inoperative position against the adjacent inner walls of the car.

2. The combination with a car having spaced door posts defining a door opening, spaced brackets secured to one of the posts on the opposite side thereof from the door opening and having their free ends bent to form angularly disposed arms terminating in eyes, a link extending through the eyes in the brackets and having the opposite ends threaded and an intermediate portion thereof bowed laterally and provided with a centrally disposed aperture forming a bearing, there being a transverse recess formed in the adjacent post and disposed in alinement with said bearing, a socket counter sunk in the opposite post and arranged in horizontal alinement with the recess, a horizontally disposed rod seated in the recess and socket, respectively, and having one end thereof extended through the aperture in the link and provided with an enlarged head bearing against the bowed portion of said link, a door section depending from the rod and forming a closure for the lower portion of the door opening, said rod and door being movable laterally in a horizontal plane and thence upwardly to inoperative position in contact with one side of the car, means for supporting the rod in inoperative position, and a catch for locking the door against accidental displacement when the latter is tilted upwardly to elevated position.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM L. AURAND.

Witnesses:

S. C. GILMORE,  
W. C. PERKINS.