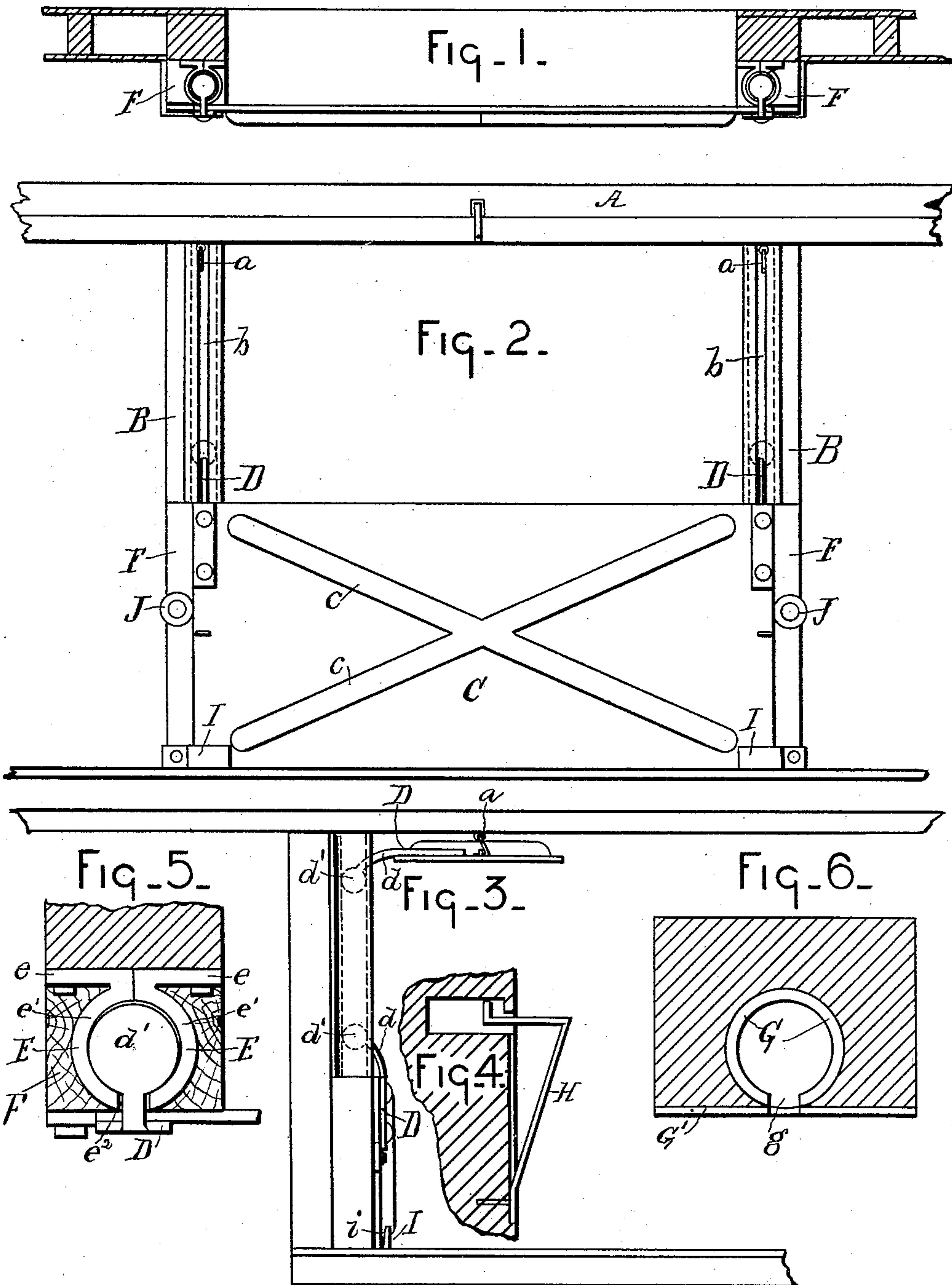


(No Model.)

W. A. PUNGS.
GRAIN CAR DOOR.

No. 435,523.

Patented Sept. 2, 1890.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM A. PUNGS, OF DETROIT, MICHIGAN, ASSIGNOR TO THE METALLIC GRAIN DOOR COMPANY, OF SAME PLACE.

GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 435,523, dated September 2, 1890.

Application filed August 9, 1889. Serial No. 320,294. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. PUNGS, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Grain-Doors for Cars; and I do hereby declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to grain-car doors; and it consists in the construction and combination and relative arrangement of parts, as hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of the door with adjacent parts in section. Fig. 2 is a side elevation. Fig. 3 is an elevation at right angles to Fig. 2. Fig. 4 is a detail view of the spring used to hold the door in its raised position. Fig. 5 is an enlarged view showing the door-post with the hanger-guides attached. Fig. 6 is a variation of the same.

In carrying out my invention, A represents the roof of the car, and B the door-posts.

C is the door, which is preferably made of metal, and is in this case stiffened with corrugations *c*. At each upper corner the door is provided with a hanger D, fastened thereto in any suitable manner. These hangers extend above the door and are curved outward, as at *d*, and are provided on their ends with knobs or balls *d'*. These knobs or balls are adapted to slide in suitable vertical channels *b* on the inner sides of the door-posts. These channels may be formed in various ways.

In Fig. 5 I have shown the mode used when fitting old cars with my hangers. In this case two pieces of metal E bent to the proper shape and each provided with a web *e* are used. Each one is provided with the semicircular piece *e'*, and when the two are brought together and attached to the post through the web, a circular channel is provided in which the knobs or balls slide. The outer edges of the semicircular pieces may be cut so that

they will not meet, and the slot *e²* be provided, in which the neck *a'* of the hanger can slide. When this style of channel is used, there must be a suitable block F attached to the post below the channel so as to make a flush surface the entire length of the doorway, against which the door can slide.

In the construction of new cars to be provided with my hangers the door-post can be bored longitudinally, as in Fig. 6, and a gas-pipe or equivalent G with a slot *g* may be inserted in the opening. A plate G' may then be attached to the face of the post.

The operation of opening the door will be seen. It is grasped and raised or slid up until the balls on the hangers have reached the top. The lower end is then swung up and it is held by hooks *a* attached to the roof at each end of the door; or there may be provided a latch-spring H, as shown in Fig. 4, above the doorway, and the edge of the door to which the hangers are attached be engaged thereon, while the other edge may be engaged by a suitable hook.

I are cleats having their inner faces *i* beveled and adapted to engage the lower edge of the door when the latter is lowered and force it tightly against the door-posts.

J are suitable guides or stops adapted to press against the ends of the door and prevent its binding when being raised or lowered.

Of course other forms of channels in which the balls may travel and other forms of fastenings might be used without departing from the spirit of my invention, which consists, essentially, in providing a grain-door with hangers, the ends of which are adapted to enter and be held in suitable vertical channels attached to or formed in the door-posts. It is also obvious that it is not necessary, although preferable, to have the knobs *d'* in the form of balls, since they may be given any other shape and the shape of the channel be made to correspond.

What I claim is—

In a grain-door for cars, the combination,

with the door-posts having vertical channels
b on their inner faces, of a vertically-movable
door provided at each of its upper corners
with a hanger D, extended above the door
5 and having its upper portion d curved out-
ward, and provided at its end with a knob d'
to engage and slide in the channel in the door-
post, and fastenings for holding the door when

swung up beneath the car-roof, substantially
as shown and described. 10

In testimony whereof I sign this specifica-
tion in the presence of two witnesses.

WILLIAM A. PUNGS.

Witnesses:

GEORGE DINGWALL,
WM. E. HIGGINBOTHAM.