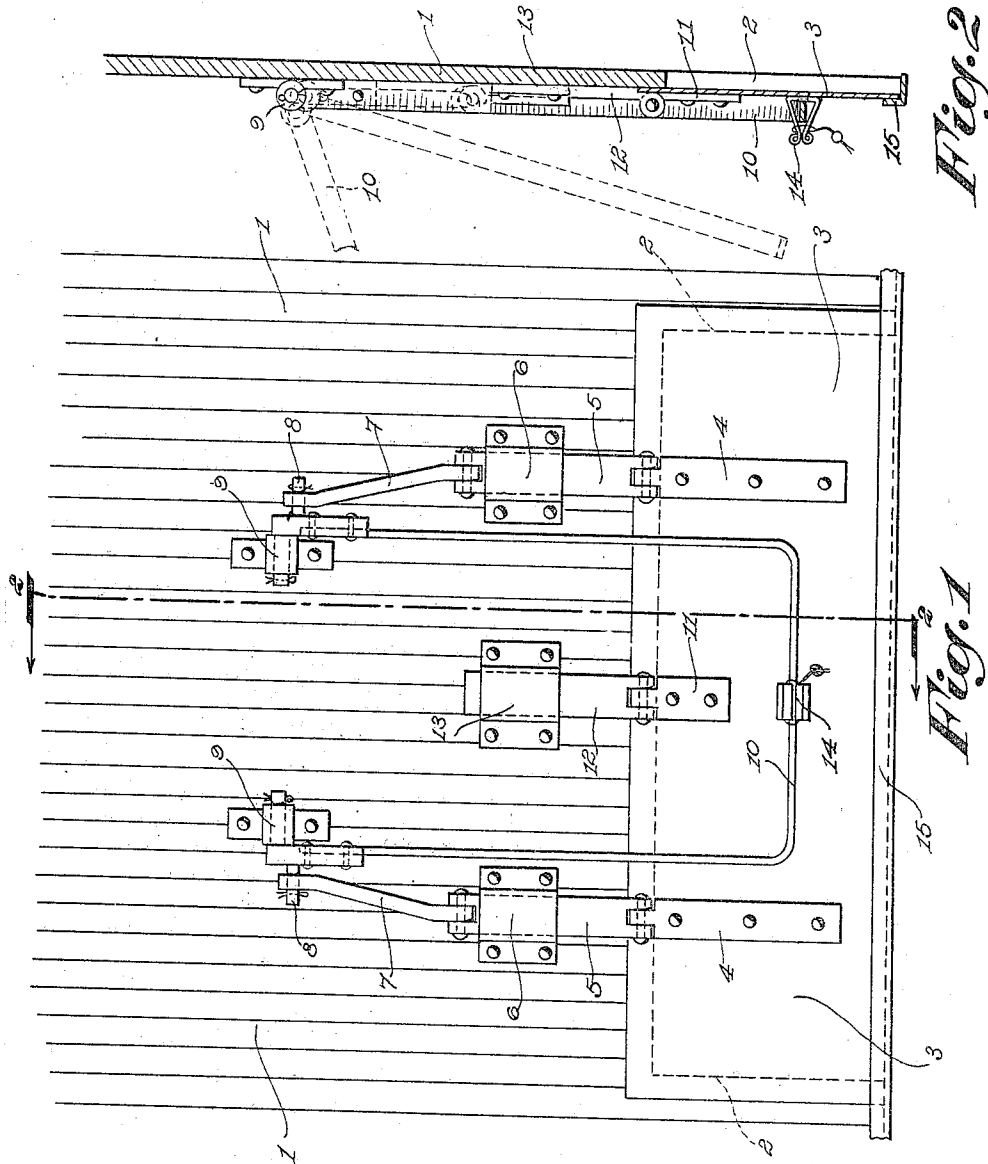


J. MORRIS & C. BROWNLEE.
GRAIN CAR DOOR.
APPLICATION FILED MAY 10, 1912.

1,045,313.

Patented Nov 26, 1912.



Witnesses:

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JOSEPH MORRIS AND CHARLES BROWNLEE, OF KEEWATIN, ONTARIO, CANADA.

GRAIN-CAR DOOR.

1,045,313.

Specification of Letters Patent.

Patented Nov. 26, 1912.

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To all whom it may concern:

Be it known that we, JOSEPH MORRIS and CHARLES BROWNLEE, both subjects of the King of Great Britain, and residing at Keewatin, Province of Ontario, Canada, have invented certain new and useful Improvements in Grain-Car Doors; and we do hereby declare that the following is 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.

The invention to be hereinafter described relates to grain car doors.

In order to more clearly disclose the construction, operation, and use of the invention, reference should be had to the accompanying drawings forming part of the present application.

Throughout the several figures of the drawings like reference characters designate the same parts.

In the drawings: Figure 1 is an outside elevation of the invention; and Fig. 2 is a central, vertical, cross section through the same.

Referring to the drawings in detail, 1 indicates a grain car door provided with an opening 2 in its lower end. This opening is adapted to be closed by a sliding relief door 3 to which are secured bars 4. To each bar is flexibly connected a flat link 5 slidably mounted in a strap 6 on the door 1. To the upper end of each link is flexibly connected one end of a short rod 7, the opposite end being journaled on the crank of a short crank shaft 8 which, in turn, is journaled in bearings 9 secured to the face of door 1. To the above mentioned cranks are secured the arms of a U shaped yoke 10. By swinging the yoke 10 upward from the full line position of Fig. 1, the rods 7, links 5, and relief door 3 will be raised, thus uncovering opening 2 and permitting sufficient grain to flow out to ease the pressure against the door and permit its easy opening. To further assist in guiding the relief door 3 in its movements, a central bar 11, link 12, and guide strap 13 are provided. About the center of the relief door 3 is provided a spring clip 14 adapted to receive the base of yoke 10 when the yoke is swung to normal or in-

operative position, as shown in full lines in Fig. 1. Any of the regular and well known "car-door seals" may be used to secure the yoke in inoperative position, as is clearly shown in Fig. 2 of the drawings.

The lower edge of the relief door 3, when the relief door is in lowered or operative position, is engaged by the vertical face of the angle iron 15 secured to the door sill. This arrangement holds the relief door firmly in place against the outward pressure of the grain from within. But, as soon as the relief door is raised sufficiently to clear the angle iron, the outward pressure of the grain will force the relief door to swing on its flexible connections, thus completely uncovering the opening 2.

It is thought that the operation and use of the invention will be clear from the preceding detailed description.

Changes may be made in the construction, arrangement, and disposition of the several parts of the invention without in any way departing from the field and scope of the same, and it is meant to include all such within this application wherein only a preferred form has been disclosed.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In combination with a door having an opening in its lower end, an angle iron carried thereby and projecting slightly beyond the lower edge thereof, a relief door slidably and swingingly mounted on said door and adapted to be engaged and held in operative position by said angle iron, links flexibly connected to said relief door, means for guiding said links, short crank shafts journaled in said door, a yoke connected thereto and adapted to operate the same, and rods flexibly connected at their opposite ends, respectively, to a crank of each of said crank shafts, and to the said links.

2. In combination with a door having an opening in its lower end, an angle iron carried thereby and projecting slightly beyond the lower edge thereof, a relief door slidably and swingingly mounted on said door and adapted to be engaged and held in operative position by said angle iron, links flexibly connected to said relief door, means for

guiding said links, short crank shafts jour-
naled on said door, a yoke connected thereto
and adapted to operate the same, rods flexi-
bly connected at their opposite ends, re-
spectively, to a crank of each of said crank
shafts, and to said links, and a clip carried
by said relief door and adapted to engage
said yoke and hold it in operative position.

In witness whereof we have hereunto set
our hands in the presence of two witnesses. 10

JOSEPH MORRIS.
CHARLES BROWNLEE.

Witnesses:

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