J. FOYEN.

CAR DOOR.

APPLICATION FILED AUG. 27, 1908.

989,495.

Patented Apr. 11, 1911.

2 SHEETS—SHEET 1.

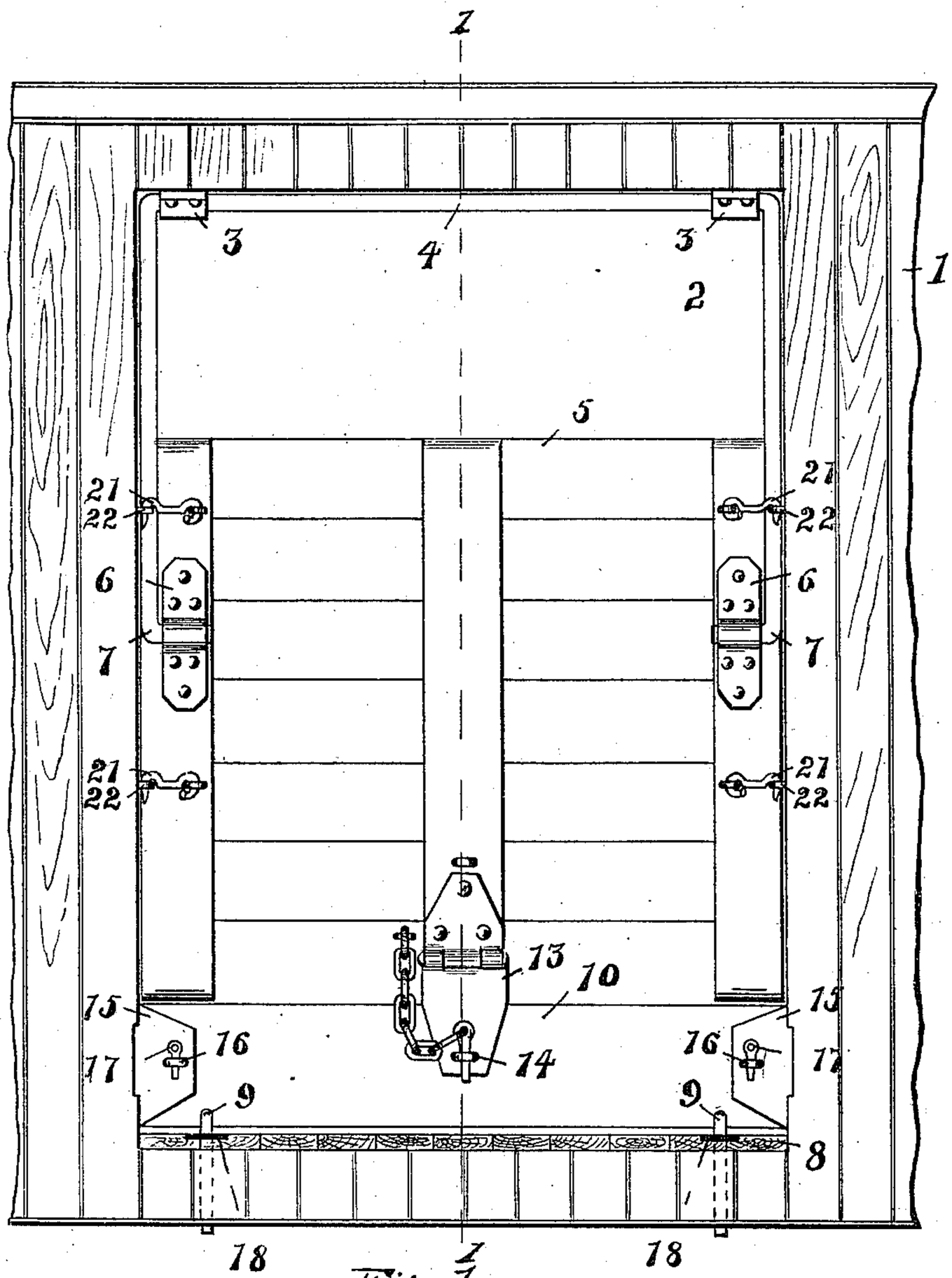

Fig. 1.

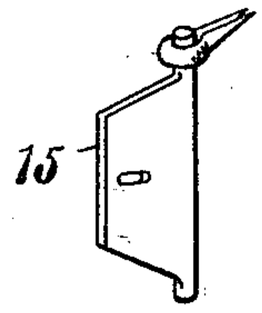

Fig. 3.

WITNESSES:

W. A. Williams.

INVENTOR.

BY James Foyen

A. S. Pattison ATTORNEY.

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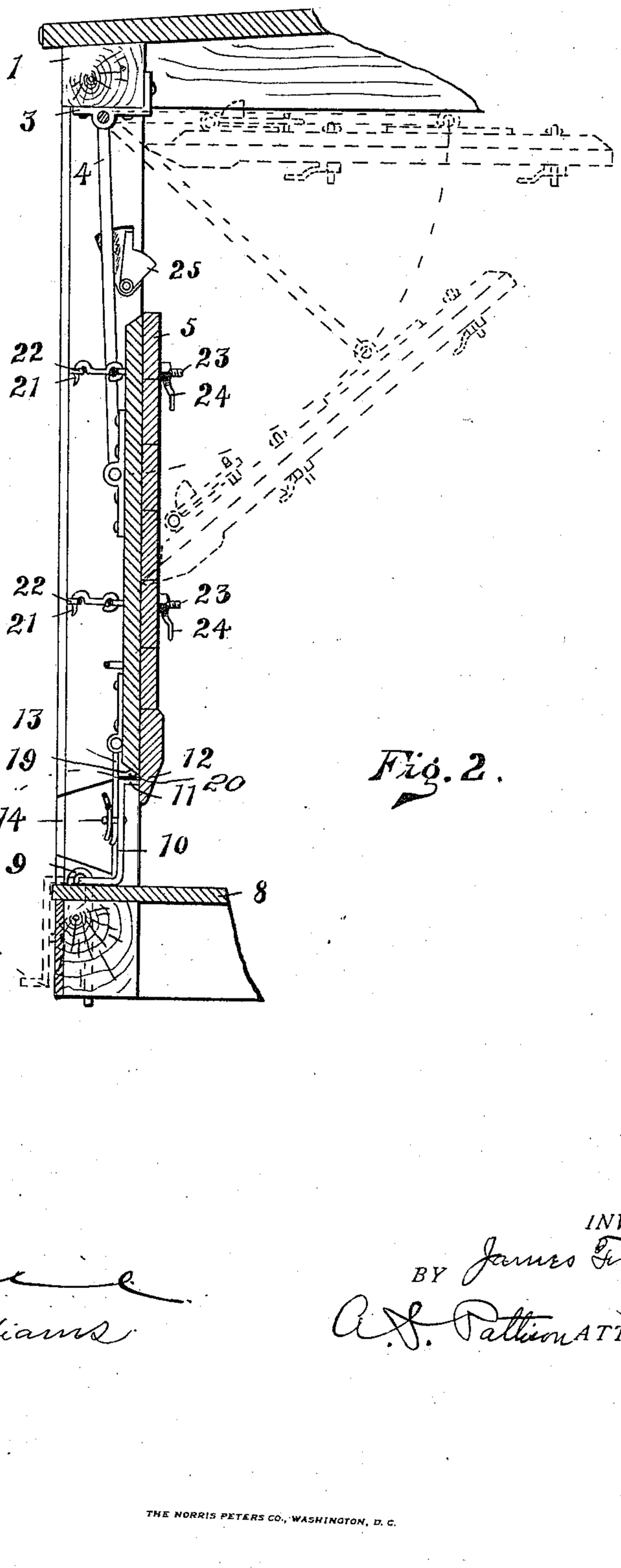

Fig. 2.

WITNESSES:

W. A. Williams

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UNITED STATES PATENT OFFICE.

JAMES FOYEN, OF DULUTH, MINNESOTA.

CAR-DOOR.

989,495. Specification of Letters Patent. **Patented Apr. 11, 1911.**

Application filed August 27, 1908. Serial No. 450,569.

To all whom it may concern:

Be it known that I, JAMES FOYEN, a citizen of the United States of America, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Car-Doors, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in car doors and pertains more particularly to what is known as grain doors.

The object of my invention is to provide a grain door of this character made in two sections, and so arranged and constructed that the grain can be more readily removed from a car.

Another object of my invention is to provide a more simple, cheap and effective door, the adjustment of which is more readily accomplished.

In the accompanying drawings, Figure 1 is a side elevation of my improved grain door applied to a car. Fig. 2 is a vertical sectional view taken on the line 1—1 of Fig. 1, showing in dotted lines the door swung upwardly. Fig. 3 is an enlarged perspective view of one of the adjustable end hasps.

Referring now to the drawings, 1 represents the side of an ordinary car having the usual opening 2 closed by a door. The upper sill of the door frame is provided with brackets 3 in which is mounted the bail 4 which is adapted to swing within the brackets 3.

5 represents the upper section of my improved door which may be constructed of any desired form of material, and which is provided at its edges with the brackets 6 into which are turned the ends 7 of the bail 4. The said turned ends 7 of the bail 4 are loosely mounted in the brackets 6 and thus allow the door to assume its vertical position upon the swinging of the bail. The upper section 5 of the door does not extend to the lower sill 8 of the door frame but a distance therefrom leaving a space below the lower end of the section 5.

The lower sill 8 of the door frame is provided at opposite sides with staples 9 upon which is mounted a Z-shaped section 10 forming the lower portion of the door. By this arrangement it will be seen that section 10 is adapted to swing outwardly and assume the position shown in dotted lines in Fig. 2 when the car door has to be opened for removing the grain. When in this position it will be seen that this lower section of the door protects the sill 8 of the door frame and forms a support for a gang plank as will be readily understood. The upper inwardly turned edge of the section 10 engages the extended portion 12 of the section 5 limiting the inward movement of the said section 10. Carried by the lower edge of the section 5 is a hasp 13 which passes over a staple 14 carried by the section 10, and which locks the two sections together.

The sides of the door frame are provided with hasps 15, which are embedded in the frame, so that when the section 10 is swung downwardly the said hasp will be flush with the door frame and thus out of the way during the unlocking of the car. The hasps when swung inwardly pass over the staple 16 carried by the section 10 and are locked together by the pins 17. The lower end of the member 10 being held by the staples 9, the sides by the hasps 15 and the upper edge by the hasp 13, it will be seen that the lower section is rigidly held in its closed position. The staples 9 are surrounded by washers 18, upon which the section 10 rests and prevents the swinging of the section 10 from wearing the sill 8.

The lower edge of the upper section 5 is cut at an angle as indicated at 19 and covered with metal to prevent wearing by contact with the upper edge 11 of the section 10. The inner face of the hasp 13 is provided with a horizontal wedge-shaped beading 20, which impinges the upper edge 11 of the lower section 10 and forces the section 10 down, so as to form a tight joint with the sill 8.

The upper section 5 carries the hooks 21 at each side, which are adapted to enter eyes 22 carried by the sides of the door frame whereby said section is locked in its closed position. The said hooks are secured to the section 5 by means of screw eye-bolts 23, having a crank nut 24 on the inside of the section. By this construction it will

be seen that after the hooks 21 are hooked into the eyes 22 the crank nuts 24 are screwed up firmly locking the section 5 in its closed position. The brackets 6 as shown in Fig. 1, are carried by the section 5 above the central line thereof whereby the section 5 will always assume a vertical position. The sides of the door frame are provided with downwardly swinging brackets 25 and when the door or upper section 5 is swung upwardly as shown in dotted lines in Fig. 2, the lower end 12 of the section is adapted to catch the brackets 25, and the door is supported in practically a horizontal position.

The door being locked in position as shown in full lines in Figs. 1 and 2, and the car being filled with grain would prevent the upper section 5 from being swung inwardly and upwardly. In order to remove the grain from the car, the hasps 13 and 15 are swung upwardly and outwardly respectively, when the pressure of the grain on the section 10 would tend to force the same outwardly, whereby the grain could be removed through the space previously occupied by the section 10. When sufficient grain is removed to relieve the pressure from the section 5, the hooks 21 are released and the section 5 can then be swung inwardly and upwardly on the bail 4 as shown in dotted lines.

If it is desired a number of brackets 25 can be arranged at different heights along the sides of the door frame, whereby the upper section can be set at any angle desired.

Having thus fully described my invention, what is claimed as new, is:

1. The combination with the door frame of a grain car, of a door composed of an upper section swingingly supported by the upper end of the door frame, and having a beveled lower end, a lower section supported by the door sill and having a horizontal upper end adapted to engage the lower end of the upper section, a hasp carried by the upper section and locking the two sections together, said hasp having a horizontal wedge shaped beading adapted to pass between the beveled lower end of the upper section and the horizontal portion of the lower section, whereby the lower section is forced downwardly against the door sill.

2. The combination with the door frame of a grain car, of a door composed of an upper section swingingly supported by the upper end of the door frame, means for locking the section in a vertical position, a lower Z-shaped section having its horizontal lower end swingingly supported by the door sill in such a position, that when the same is swung outwardly it covers the outer edge of the door sill and extends downwardly parallel with the side of the same, means carried by the lower end of the upper section for locking the lower section thereto.

3. The combination with the door frame of a grain car, of a door composed of an upper section, a bail carried by the upper end of the door frame and having its lower ends pivotally connected to the section above a central line, means for locking the section in a vertical position, the lower end of the section being beveled, a flange carried by the upper section and extending below the beveled end, a lower Z-shaped section swingingly supported by staples to the door sill, the upper end of said section engaging the flange of the upper section, a hasp carried by the lower end of the upper section and locking the lower section, to a wedge shaped beading carried by the inner face of the hasp and wedging between the beveled lower end of the upper section and the upper end of the lower section, hasps carried by the sides of the door frame for locking the ends of the lower section thereto, and brackets carried by the sides of the door frame for engaging and supporting the upper section in its adjusted position.

4. The combination with the door frame of a car, of a door composed of an upper section having a beveled lower end, a bail pivotally supported by the upper end of the door and having its lower end pivotally connected to the outer face of the section above a central point, a lower section pivotally carried by the door sill and having a horizontal upper end adapted to engage the lower end of the upper section, a hasp carried by the upper section and locking the two sections together, said hasp having a horizontal wedge-shaped beading adapted to pass between the lower beveled end of the upper section and the horizontal portion of the lower section, and a pivoted member carried by the sides of the door frame and adapted to swing inwardly under the lower end of the upper section when the same is raised vertically and support it in its adjusted position.

5. The combination with the door frame of a grain car, of a door composed of an upper section, a bail pivoted to the upper end of the frame, and having its lower ends pivotally connected to the upper section above a central line, means carried by the door frame for engaging the sides of the section and locking it in a vertical position, the lower end of the section being beveled, a flange carried by the upper section and extending below the beveled end, a lower Z-shaped section swingingly supported by staples to the door-sill, a hasp carried by the lower end of the upper section and locking the lower section, a wedge-shaped beading carried by the inner face of the hasp and

wedging between the lower end of the upper section and the upper end of the lower section, hasps carried by the sides of the door frame for locking the ends of the lower section thereto, brackets carried by the sides of the door frame for engaging the end of the upper section and supporting it in its adjusted position and means for holding the upper section in its upward horizontal position.

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

JAMES FOYEN.

Witnesses:

NORMAN E. LAWLAND,

S. GEO. STEVEN.