Nov. 21, 1933. C. G. JOHNSON 1,936,237

HINGE

Original Filed Dec. 1, 1926

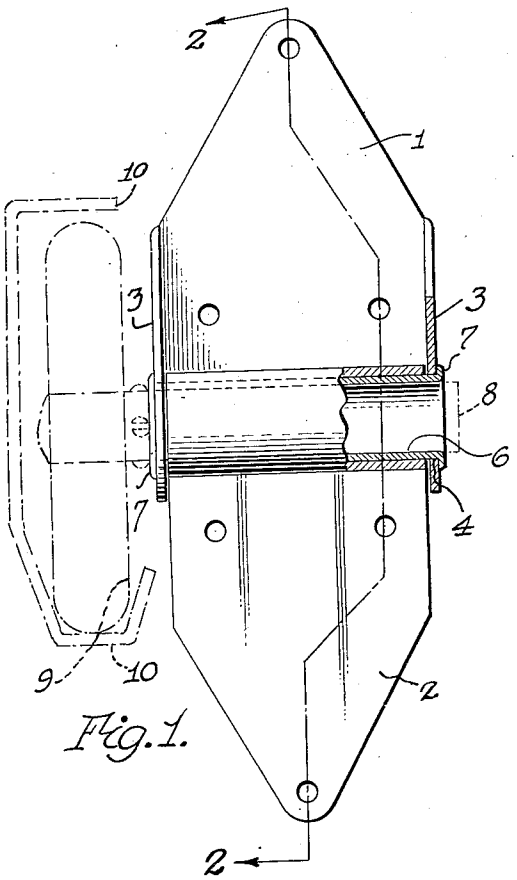

Fig. 1.

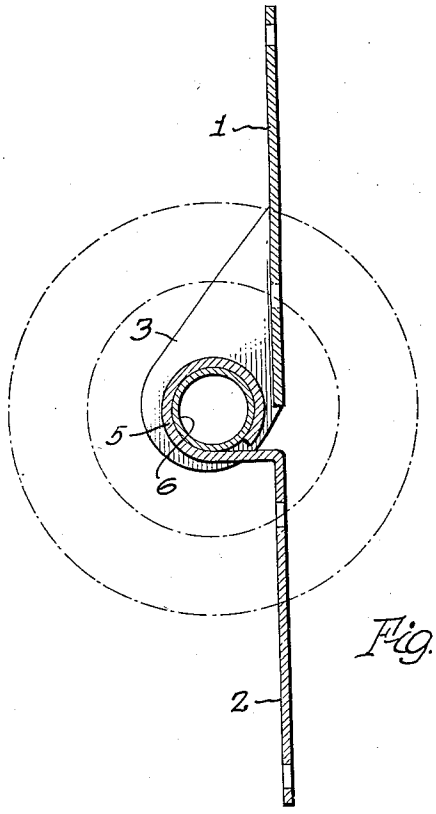

Fig. 2.

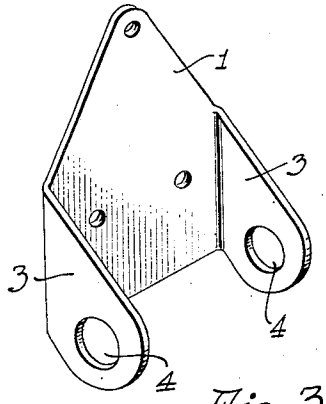

Fig. 3.

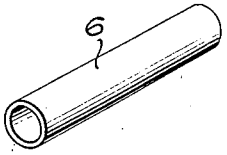

Fig. 5.

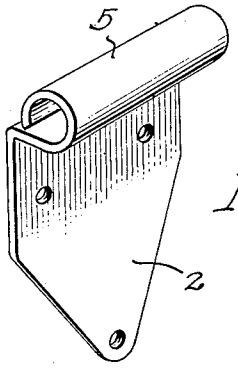

Fig. 4.

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UNITED STATES PATENT OFFICE

1,936,237

HINGE

Clarence G. Johnson, Hartford City, Ind.

Original application December 1, 1926, Serial No. 151,884, and in Canada August 20, 1928. Divided and this application August 12, 1929. Serial No. 385,294

3 Claims. (Cl. 16—128)

This application is a division of my co-pending application Serial No. 151,884, filed December 1, 1926 (Patent No. 1,820,459, dated August 25, 1931). The invention pertains to a hinge adapted particularly to connect the panels or sections of a lifting door which rides between rails having a rather sharp bend. Due to the bend, it will be obvious that flexibility in the door structure is required, and this flexibility is obtained by the hinge connections between the door panels or sections.

The object of the invention is to provide a simple and efficient hinge for this purpose, wherein the hinge pin is in the nature of a sleeve which serves as a bearing for the roller which rides on one of the above mentioned rails. The invention further contemplates the support of the roller in such a manner that the same may readily and automatically accommodate itself in the hinge according to the distance between the rail and a given point on the hinge, which distance may vary as the door moves along the rails, owing to inaccuracies or slight variations in the assembling of the entire door structure.

The invention is fully disclosed by way of example in the following description and in the accompanying drawing, in which

Figure 1 is an elevation of the hinge, partly in section;

Figure 2 is a section on the line 2—2 of Figure 1;

Figures 3 and 4 are perspective views of the hinge plates or leaves, and

Figure 5 is a perspective view of the hinge pin.

Reference to these views will now be made by use of like characters which are employed to designate corresponding parts throughout.

The hinge plates or leaves are designated by the numerals 1 and 2 and are substantially of like shape. The former has a pair of outwardly projecting ears 3 apertured at 4, and the plate 2 is formed at one end with a tubular portion 5 adapted to fit between the ears 3 and have its open ends register with the apertures 4.

The parts arranged in this manner are pivotally held together by a hinge pin 6 in the nature of a sleeve received in the tubular portion 5 and having its ends protruding through the ears 3 as shown more clearly in Figure 1. The protruding ends of the member 6 are flanged or peened over as at 7 on the outer faces of the ears 3, whereby the various parts are pivotally held together and prevented from slipping relatively to each other transversely of the plates 1 and 2. The sleeve 6 serves as a bearing for a pintle 8 carrying at one end a roller 9 which rides in a rail 10.

It will be understood that the plates 1 and 2 are secured to successive sections or panels of a lifting door and that two rails similar to the member 10 are provided at both sides of the door whereby to determine the path in which the door may be moved due to the reception of the rollers 9 therein. Inasmuch as the rails 10 are usually formed with a rather sharp bend so that the door may be swung to an overhead horizontal position, the door requires flexibility which in the present instance is afforded by the pivotal connections between the door panels. This type of door as well as the track associated therewith is well known and is shown for example in my British Patent No. 240,876 of July 1, 1926.

The pintle 8 is slidably received in the sleeve 6 whereby the roller is permitted to adjust itself or to be adjusted to accommodate itself to various positions which the track may occupy relatively to the hinge at various points along the track.

Although a specific embodiment of the invention has been illustrated and described, it will be understood that various alterations in the details of construction may be made without departing from the scope of the invention as indicated by the appended claims.

What I claim is:

1. A hinge comprising a plate having apertured ears thereon, another plate having a tubular portion received between said ears and registering with the aperture of said ears, and a sleeve-like hinge pin passing through said tubular portion to form a bearing therefor and also passing through said ears and held against sliding relatively to the latter, said pin having a smooth interior surface whereby it is adapted to function as a bearing.

2. A hinge comprising a plate having apertured ears thereon, another plate having a tubular portion received between said ears and registering with the aperture of said ears, and a sleeve-like hinge pin passing through said tubular portion to form a bearing therefor and also passing through said ears, the ends of said pin being flanged over the outer faces of said ears, said pin having a smooth interior surface whereby it is adapted to function as a bearing.

3. A hinge comprising a plate having outwardly extending apertured ears thereon, another plate having a tubular portion received between said ears and registering with the aperture of said ears, said plate being L-shape on a section normal to the axis of the tubular portion, and a sleeve-like hinge pin passing through said tubular portion to form a bearing therefor and also passing through said ears and held against sliding relatively to the latter, said pin having a smooth interior surface whereby it is adapted to function as a bearing.

CLARENCE G. JOHNSON.