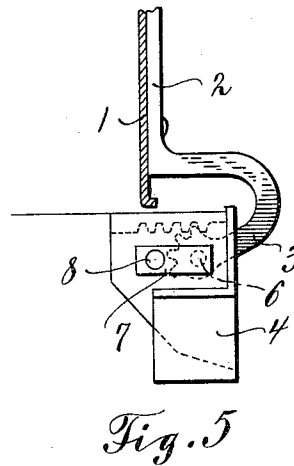
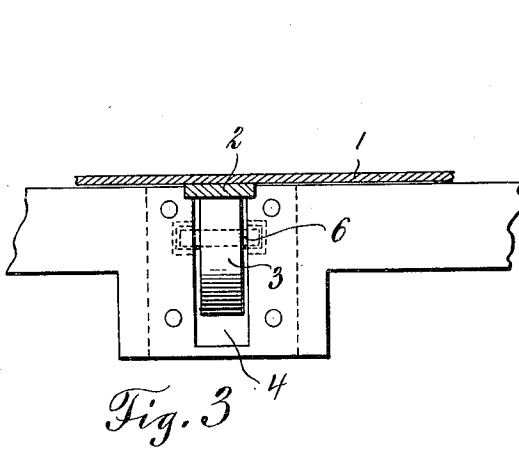
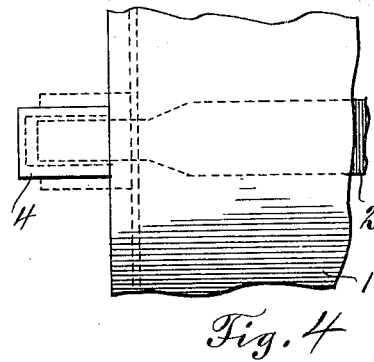
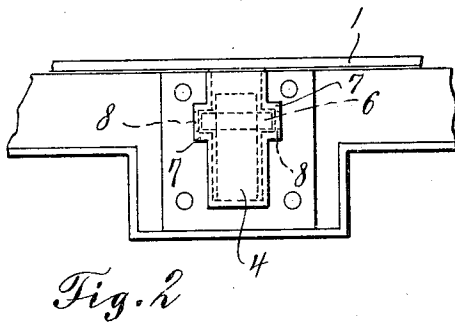
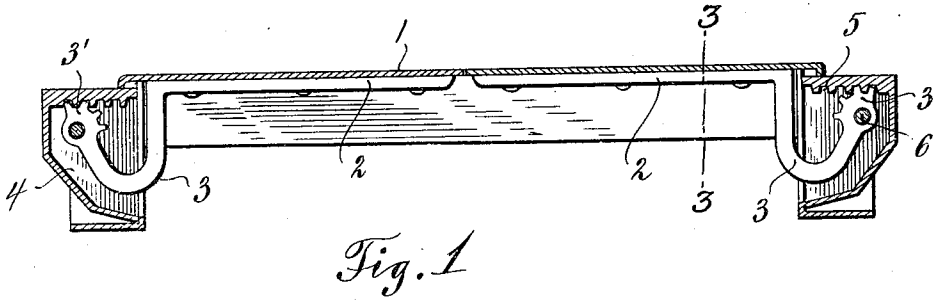


J. DE ROSE.
CELLAR DOOR HINGE.
APPLICATION FILED FEB. 27, 1911.

993,227.

Patented May 23, 1911.



WITNESSES:

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JOSEPH DE ROSE, OF PATERSON, NEW JERSEY.

CELLAR-DOOR HINGE.

993,227.

Specification of Letters Patent. Patented May 23, 1911.

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To all whom it may concern:

Be it known that I, JOSEPH DE ROSE, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Cellar-Door Hinges, of which the following is a specification.

The present invention embodies a special form of hinge for cellar doors, hatchway doors, or the like.

In carrying out the invention, the hinging means for the door comprises a special form of arm having a floating pivot whereby when the door is opened and closed, it moves not only pivotally but receives a bodily movement independent of such pivotal movement.

The invention resides in the special form of a floating pivot constituting an element of the hinge and not only performing its function as a pivotal member but forming an anti-friction bearing operating in an advantageous way.

For a full understanding of the present invention, reference is to be had to the following description and to the accompanying drawings, in which—

Figure 1 is a sectional view showing a pair of cellar doors hinged by means comprising the invention; Fig. 2 is an end view of the box which receives the arm of the door and in which is mounted the rolling pivot; Fig. 3 is a section taken about on the line 3—3 of Fig. 1, looking outwardly; Fig. 4 is a fragmentary plan view of one of the hinge devices; Fig. 5 is a sectional view showing the position of the parts of the hinge when the cover is upraised.

Specifically describing the invention, including its advantages and peculiar operation, in the drawings, 1 denotes an ordinary metal cellar door such as commonly used at the present time, and which is secured in any substantial manner to the hinge arms 2. The arms 2 comprise shanks directly fastened to the door 1 and curved extensions 3 adapted to project into boxes 4, said boxes being arranged at one side of the doorway or shaft, which is closed by means of one or more of the doors 1. Each box 4 is closed on all sides except that facing the hinge member 2, the latter side being open to permit movement of the curved extension 3 of said arm 2.

The extension 3 of the hinge arm 2 is

formed at its free end with a toothed segment 3', the teeth of which mesh with teeth 5 formed on the under side of the top of the box 4. A pivotal connection is established between the arm 2 and the box 4 by means of a loose pivot 6 which passes through the free end of the extension 3 and has its ends arranged to operate in elongated guides 7 integrally formed in the opposite sides of the box 4.

The outer or pivoted edge portion of the door 1 is extended beyond the adjacent side of the box or boxes 4 so as to overlap the top of the latter, as shown most clearly in Fig. 1, preventing foreign matter, etc., from entering the hatch or cellar-way between the swinging edge portions of the doors and the walls of the opening normally closed thereby.

In practical operation, it will be apparent that when the door 1 is raised to open the same, a pivotal movement of the part 3 will be caused, by reason of the provision of the pivot member 6. Since the segment 3' is in mesh with the teeth 5, however, the pivotal movement of the door causes a floating movement of the pivot member 6, or in other words, the pivot 6 is shifted in the bearings or guides 7 of the box, simultaneously with the movement of the door, either upwardly or downwardly. When so shifted, it will be apparent that by reason of the fact that the pivot 6 is loose on the extension 3, said pivot is adapted to roll in raising or lowering the door 1, under which conditions it forms an anti-friction bearing, increasing the ease with which the door may be operated and necessarily reducing friction between the parts to a minimum.

The shifting of the pivotal axis of the door 1 in raising the same permits the door to remain in an open position, as shown in Fig. 5. Small plugs 8 are detachably mounted on the outer walls of the guide 7 and permit of insertion therethrough of the rolling pivot 6, in the preliminary adjustment of the parts.

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

1. In combination with a cellar door, or the like, a hinge device therefor comprising a box provided at opposite sides thereof with guide bearings, and formed with teeth adjacent to said bearings, and a hinge arm projecting from the door and terminating in an extension projecting into the box and

formed with a toothed segment at its free end arranged in mesh with the teeth of the box, and a loose rolling pivot passing through the outer end portion of the extension of the arm, and having its ends mounted in the guide bearings of the box, whereby when the door is opened, said pivot is shiftable lengthwise of the bearings by rolling contact therewith.

2. In combination with a cellar door, or the like, hinging means for said door comprising a box adjacent to the outer edge of the door and closed on all sides except that adjacent to said door, the top of the box being provided on its under side with a plurality of teeth, and the sides of the box being provided with elongated guide bearings, and a hinge member comprising an arm secured

to the door and having a downwardly and upwardly curved extension projecting into the box and formed at its terminal with a toothed segment in mesh with the teeth at the top of the box, and a pivot passing loosely through the outer end portion of the extension of the arm and having its ends mounted in the guide bearings of the box for rolling contact therewith, whereby the pivot may be shifted longitudinally of the bearings on raising and lowering of the door.

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

JOSEPH DE ROSE.

Witnesses:

JOHN KEYS,

JOHN RANEIR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."