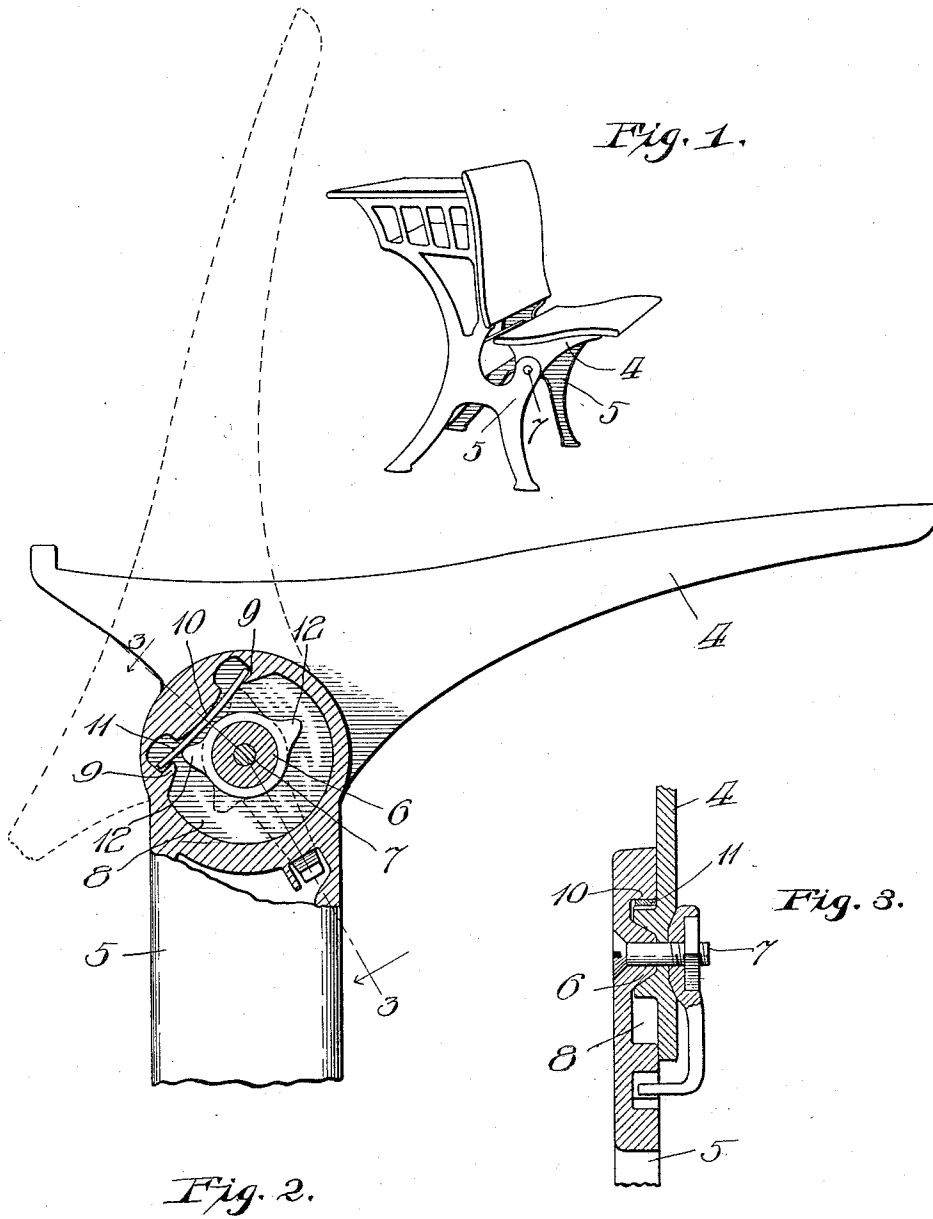


G. H. ABBOTT.
SEAT HINGE.
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1,189,770.

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Witness:
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UNITED STATES PATENT OFFICE.

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SEAT-HINGE.

1,189,770.

Specification of Letters Patent.

Patented July 4, 1916.

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To all whom it may concern:

Be it known that I, GEORGE H. ABBOTT, a citizen of the United States, residing at Elgin, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Seat-Hinges, of which the following is a specification.

This invention relates to a construction of hinge for seats of the kind such as are commonly used in schools, halls, or other public places.

In the present invention I have sought to provide a hinge construction which is simple, durable, and inexpensive, and which eliminates, as far as possible, noise and shock due to the seat being swung into or out of operative positions.

The invention relates further to numerous other features of construction and combinations of parts as will be more fully hereinafter pointed out.

In the drawing: Figure 1 is a perspective view of a seat with which the present hinge construction may be advantageously utilized; Fig. 2 is a view partly in section of my seat hinge, dotted lines indicating the position of the seat when swung upwardly out of operative position; and Fig. 3 is a transverse section through the hinge taken on line 3—3 of Fig. 2.

Seats which are commonly used in schools, or other similar places, are usually capable of swinging up out of operative position to afford a wide passage when not in use. Considerable noise and jar results in consequence when the seat reaches its limit of movement, either up or down.

It is the purpose of the present invention to provide a simple and effective construction for eliminating the noise and shock which is a common characteristic of swinging seats.

Referring to the drawing, Fig. 2, I have shown a hinge construction which embodies a swinging arm 4 on which the seat is supported pivoted to a second arm or base 5 which is secured to the floor. As best shown in Fig. 3, this pivotal construction includes a boss or trunnion 6 on the base seating within a complementary annular socket formed within the swinging arm, suitable means such as the bolt 7 being provided for holding the two arms rotatably together.

Surrounding the trunnion 6 is a recess 8 of generally annular configuration, having

two shoulders 9 projecting thereinto. Substantially midway between the projecting shoulders 9 is an arc shaped projection 10 which also extends into the recess 8. A flat hardened spring 11 is positioned within the recess 8 having its ends supported one on each of the shoulders 9 and its center bearing against the arc shaped projection 10, the relation of these points of contact with the spring being such that the spring is bent or sprung out of a straight line when placed within the recess 8 in the manner described. Manifestly when so positioned it is secured against displacement by reason of its own tension. Oppositely extending cams 12 are provided upon the swinging arm 4 which lie within the annular recess 8, each of which is arranged to engage with one end of the spring 11 when the seat arm is swung to its extreme position. The engagement of these cams with the ends of the spring determines the limits of movement of the seat.

It will be understood that as the seat is swung into downward position, as indicated in Fig. 2, the cam 12 presses against one end of the spring. This action results in an absorption of the shock and jar which would otherwise occur when the seat comes to a stop. The engagement of the cam against the spring furthermore serves to support the weight upon the seat with a cushioning action. By providing an arc-shaped or convex surface as the fulcrum for the spring, the fulcrum is constantly moved toward that end of the spring on which the load or weight is supported. In other words, the length of the spring arm under tension decreases with increase of the weight applied.

I claim:

1. A seat hinge embodying, in combination, two pivotally connected members, a flat spring secured to one of said members, a convex fulcrum over which said spring is arranged to bend, and a cam secured to the other of said members arranged to engage with the spring to bend the same over the convex fulcrum when said latter member is moved to a certain position, whereby the end of the spring projecting beyond the fulcrum is decreased in length with an increase in weight applied, substantially as described.

2. A seat hinge embodying, in combina-

tion, two pivotally connected members, a flat spring secured to one of said members, a convex fulcrum over which said spring is arranged to bend, and oppositely arranged
5 cams secured to the other of said members arranged each to engage with one end of the spring to bend the same over the convex fulcrum when said latter member is moved to certain positions, whereby the end of the spring projecting beyond the fulcrum is de- 10 creased in length with an increase in weight applied, substantially as described.

GEORGE H. ABBOTT.

Witnesses:

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