

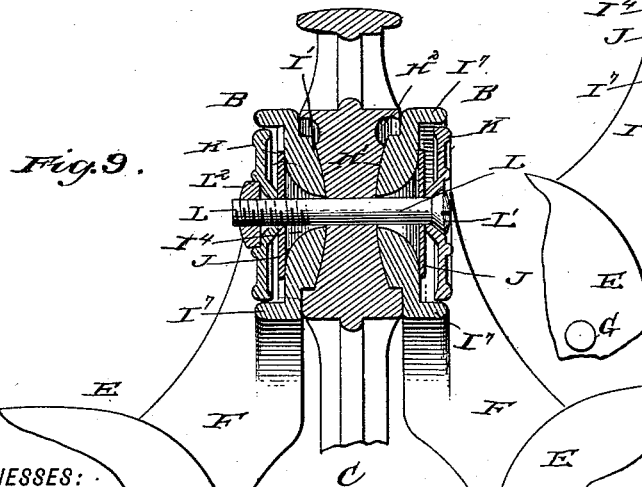
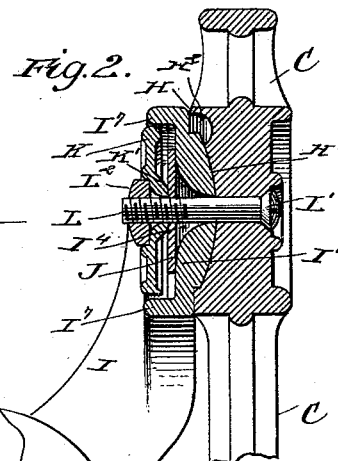
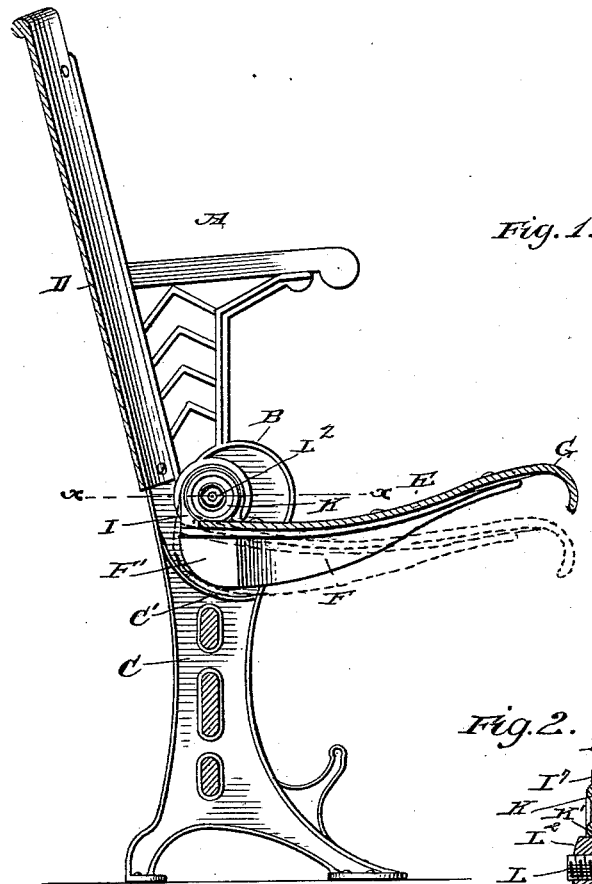
(No Model.)

2 Sheets—Sheet 1.

J. M. SAUDER.
HINGE FOR FOLDING SEATS.

No. 420,246.

Patented Jan. 28, 1890.



WITNESSES:

W. R. Davis
C. Sedgwick

INVENTOR:

J. M. Sauder
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ATTORNEYS.

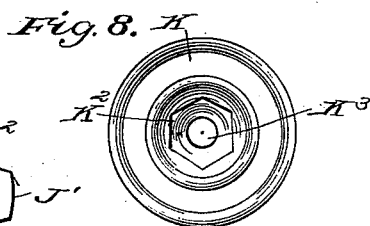
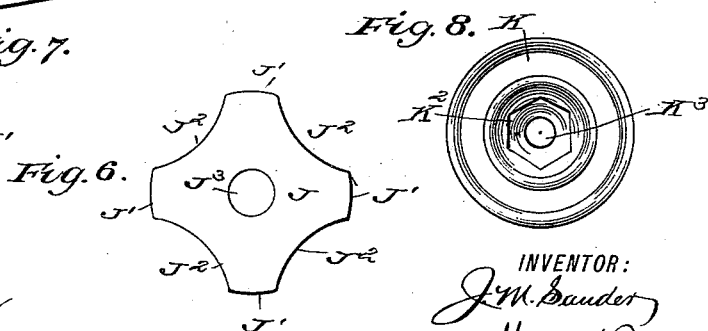
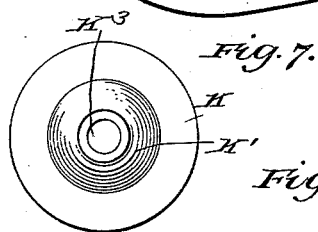
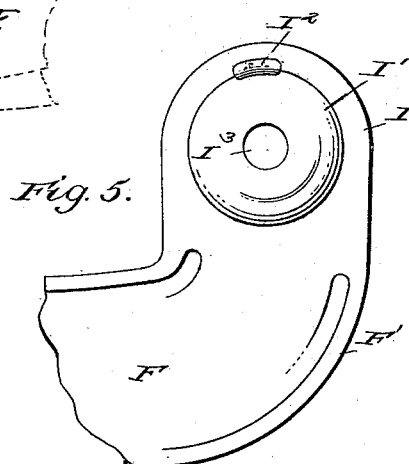
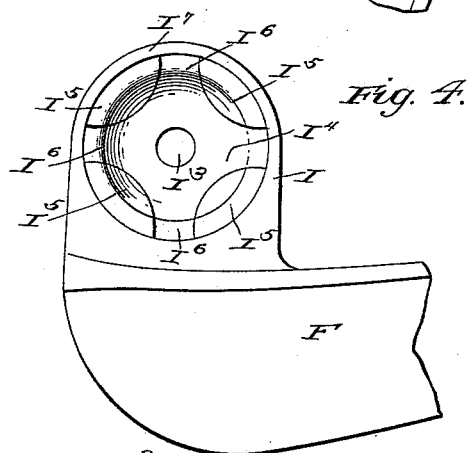
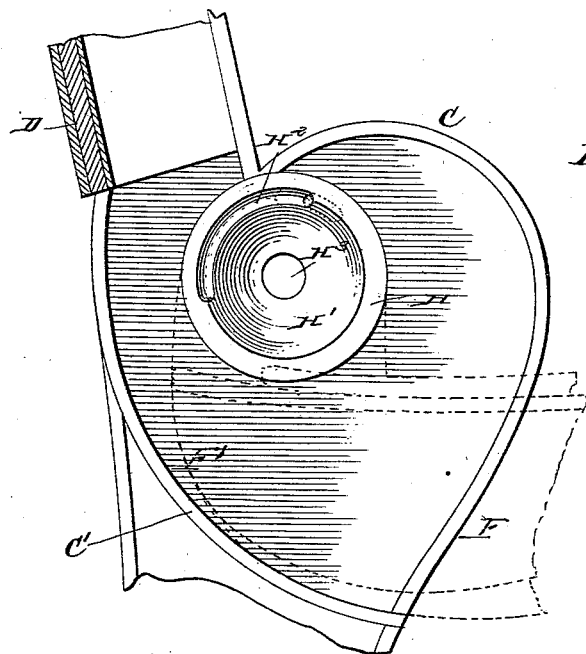
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J. M. SAUDER.
HINGE FOR FOLDING SEATS.

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WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN M. SAUDER, OF BLOOMSBURG, PENNSYLVANIA.

HINGE FOR FOLDING SEATS.

SPECIFICATION forming part of Letters Patent No. 420,246, dated January 28, 1890.

Application filed April 23, 1889. Serial No. 308,240. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. SAUDER, of Bloomsburg, in the county of Columbia and State of Pennsylvania, have invented a new and Improved Hinge for Folding Seats, of which the following is a full, clear, and exact description.

The invention relates to hinges for folding seats, such as are used on opera-chairs, school-desks, &c.; and the object of the invention is to provide a new and improved hinge which is perfectly noiseless when the seat is closed or folded up, at the same time being very simple and durable in construction.

The invention consists in certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of a chair provided with the improvement. Fig. 2 is an enlarged sectional plan view of the same on the line *xx* of Fig. 1. Fig. 3 is an enlarged face view of the fixed member of the hinge. Fig. 4 is an enlarged front face view of the movable member of the hinge. Fig. 5 is an enlarged rear face view of the same. Fig. 6 is an enlarged face view of the spring. Figs. 7 and 8 are face views of the washer, and Fig. 9 is an enlarged sectional plan view of a double hinge.

The chair A, to which the improved hinge B is applied, is provided with the usual standards C, connected with each other by the backs D and carrying between them the seats E, each provided with the usual brackets F, supporting the seat G. The end of each bracket F forms the movable member of the hinge B.

On the inner face of the fixed member C is formed an annular offset H, having a central pivot-aperture H³ and a concavity H' concentric therewith.

The movable member F of the hinge B is provided on its end with an arm I, carrying a convex offset I', fitting into the concavity H' of the fixed member C. Near the outer edge of the offset I' is formed a lug I², adapted

to pass into the segmental groove H², so as to slide therein when the said movable member F is turned. A central aperture I³ is also formed in the offset I' and registers with the central aperture H³ in the offset H. The offset I' is formed on the inside of the movable member F, and on the opposite side of the said offset is formed a circular recess I⁴. Into this recess I⁴ project a number of lugs I⁵, arranged opposite each other to form recesses I⁶ at the outer edge of the circular recess I⁴, as plainly shown in Fig. 4. A flange I' concentrically surrounds the circular recess I⁴.

Into the recesses I⁶ fit the ends J' of a spring-plate J, having the curved sides J² formed similar to the lugs I⁵, but somewhat smaller, so as not to touch the said lugs I⁵. In the middle of the spring-plate J is formed an aperture J³, registering with the apertures I³ and H³ before mentioned. When the spring-plate J is placed with its ends J' in the recesses I⁶, then the said spring-plate is prevented from moving and turns with the movable member F when the latter is opened or closed, as will be hereinafter more fully described.

On the top of the spring-plate J rests an apertured cone K', formed on the inside of the washer K. On the outside of the washer K is formed a hexagonal recess K², and in the center of the said washer is formed an aperture K³, concentric with the said hexagonal recess K² and the cone K'. A bolt L, provided with a head L', passes through the apertures H³, I³, J³, and K³, and carries on its outer threaded end a nut L², which fits into the hexagonal recess K² of the washer K. The head L' of the said bolt L rests on the outside of the fixed member C, so that when the several parts are in place, as shown in Fig. 2, and the nut L² is screwed up to force the washer against the spring J, then any desired tension can be given to the latter, so as to press with more or less force against the movable member F. The lower edge of the movable member at its inner end is rounded, as at F', and rests on the correspondingly-curved rim or rib C' on the standard C when the seat is in its fully-lowered position, as shown in dotted lines, Figs. 1 and 3.

When two seats E are hinged to one standard, as illustrated in Fig. 9, then an offset H

is formed on each side of the said standard, and the movable members of the hinge are fitted onto the said offsets, as above described, and plainly shown in Fig. 9.

5 When the several parts of the hinge are in place, as illustrated in Fig. 2, and the operator moves the seat E upward, its upward movement is limited by the lug I² of the movable member F coming in contact with one
10 end of the segmental groove H². The seat E is then in a folded position, being close to the back E. When the operator moves the seat E downward into nearly its lowermost position, the lug I² strikes against the other end
15 of the segmental groove H², thus preventing the further downward movement of the seat E until a heavier pressure is applied to the seat—that is, when a party sits in the seat a further downward motion of the seat takes
20 place as the said lug I² is forced out of the segmental groove H² against the tension of the spring-plate J, which is thus slightly compressed. The seat E comes to its full
25 stop when the rounded or curved edge F' of the bracket F fits onto the lower end of the rounded or curved rim C' of the standard C. The last position of the seat is shown in dotted lines in Fig. 1. Thus it will
30 be seen that when the operator throws the seat down from its folded position the seat comes to a stop, when the lug I² strikes the upper end of the segmental groove H². A slight noise occurs at this moment; but it will
35 not be heard outside, as it is confined to the interior of the hinge. The final movement of the seat to its lowermost position is gradual, so that no noise occurs when the segmental edge F' passes onto the rim C'.

It is understood that when the seat E is
40 turned on the hinges B the bolt L, the washer K, and its nut L² remain stationary with the standard C. The spring-plate J naturally turns with the movable member F on account
45 of being embedded in the recesses I⁶, as before described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a hinge, the combination, with a fixed member having an annular centrally-apertured offset provided with a concentric concavity, a segmental groove in the face of said offset, and a stop rib or rim below said offset, of a movable member having a convex centrally-apertured offset entering said concavity and a lug projecting into said groove, the groove being of a length to permit the lug to pass laterally out of it before the movable member is in its lowermost position, a bolt passing through said apertures, and a spring
50 on the bolt, against which the movable member bears when the passage of the lug from the groove forces the movable member laterally away from the fixed member, the movable member in its lowermost position resting
55 against the rib or rim on the fixed member, substantially as set forth.

2. The combination, with the fixed member C, formed on its inner face with a concave apertured offset H, provided in its face with
60 a segmental groove H², and a curved rim or rib C' below said offset, of the movable member F, rounded at F' and formed with an upwardly-projecting arm I at its rear end; having an annular flange on its outer side, a convex apertured offset I' on its opposite side
65 entering the said concavity, and with a lug I², the groove H² terminating at a point which will allow the said lug to pass thereout and force the movable member laterally just before
70 it reaches its lowermost position, a bolt L, passing through the apertures, the plate-spring J, the washer K, having a central conical projection K', provided with a bolt-aperture, and the nut L², holding said projection
75 against the spring, substantially as set forth.

JOHN M. SAUDER.

Witnesses:

THEO. G. HOSTER,
C. SEDGWICK.