(No Model.) 2 Sheets—Sheet 1.

A. D. LINN.

TENSION HINGE FOR SCHOOL DESKS AND SEATS.

No. 531,686. Patented Jan. 1, 1895.

Fig. 1.

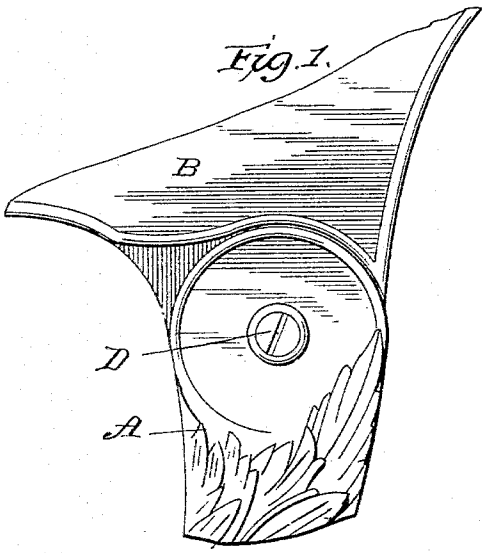


Fig. 2.

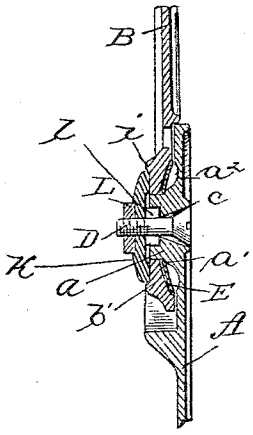
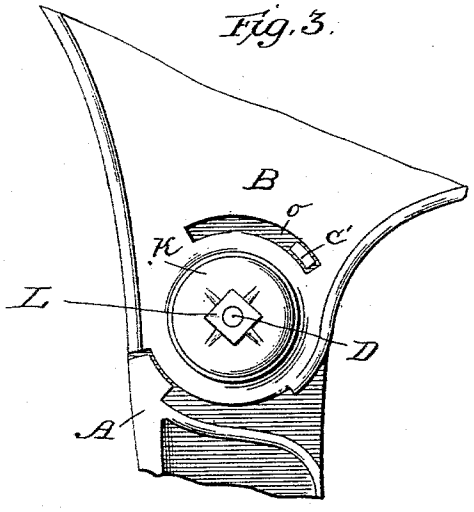


Fig. 3.



Witnesses
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F. L. Middleton

Inventor
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Atty

(No Model.) 2 Sheets—Sheet 2.

A. D. LINN.

TENSION HINGE FOR SCHOOL DESKS AND SEATS.

No. 531,686. Patented Jan. 1, 1895.

Fig. 4.

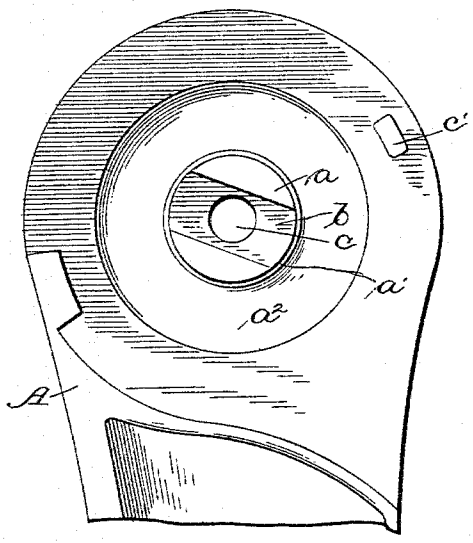


Fig. 6.

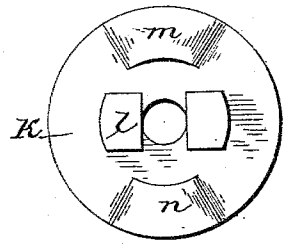
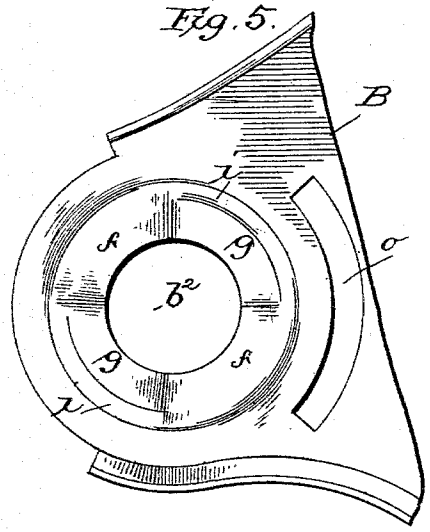


Fig. 5.



Attest
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UNITED STATES PATENT OFFICE.

ALLEN D. LINN, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO THE GRAND RAPIDS SCHOOL FURNITURE COMPANY, OF SAME PLACE.

TENSION-HINGE FOR SCHOOL DESKS AND SEATS.

SPECIFICATION forming part of Letters Patent No. 531,686, dated January 1, 1895.

Application filed June 13, 1894. Serial No. 514,396. (No model.)

To all whom it may concern:

Be it known that I, ALLEN D. LINN, a citizen of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Tension-Hinges for School-Desks, Opera-Chairs, and other Seats, of which the following is a specification.

My invention relates to that class of hinges used in school desks to connect the seat to the standards and in which the joint is provided with a spring so arranged in connection with the other parts of the joint that the tension of the spring, when the seat is raised, puts the parts under pressure and holds the seat in its elevated position by the frictional contact of the parts.

The object of my invention is to simplify the construction and thereby lessen the cost and to improve the operation in point of durability and effectiveness.

My invention consists of the special construction substantially as hereinafter described.

My invention is illustrated in the accompanying drawings, in which—

Figure 1, shows a side elevation of the joint or hinge and a part of the standard and seat arm. Fig. 2, shows a central section of the hinge, and Fig. 3, the rear side of Fig. 1. Fig. 4, shows the inner face of the standard part of the hinge. Fig. 5, shows the outer face of the arm part of the hinge, and Fig. 6, the inner face of the cap.

In the drawings, the standard of the seat is shown at A, the figure showing only the upper part of the standard in the vicinity of the hinge. On the inner face of the hinge part of the standard is a cylindrical boss a having around it a narrow ledge a' and outside of the ledge an annular cavity a^2. Within the boss is a central transverse depression b, and through this is a central hole c cone shaped at its outer end. The seat arm or bracket B has a central hole b^2 in its hinge end exactly fitted to the boss a on which the bracket turns. Around this hole on the inner face is a cavity b' coterminous to that in the inner face of the standard. Around the hole b^2 is an annular bearing face, two opposite parts of which f, are raised, with the ends inclined to the low parts g, of said face, and around the outside is a rib i. On the outside of the bracket is a cap K which has at the center on its inner face transverse projections l fitting the central transverse recess b and through the center of this cap is the bolt hole. The transverse projection l prevents the cap from turning on the standard. There is on the inner face of the cap an annular bearing with two raised parts m m, the bearing being exactly like that on the outer face of the bracket excepting that when the seat is down the high parts are so arranged on the cap as to bear on the low parts of the bracket bearing, but when the seat is raised the high parts on the bracket move up on the high parts of the cap.

The bolt D passes through the hinge and is held by a nut L. Interposed between the seat standard and the bracket arm around the boss a, with its inner edge resting on the ledge a', is an annular spring plate E, the outer edge of which is in contact with the edge of cavity b' this cavity, as shown in Fig. 2, being dish shape so that when the parts are pressed together by means of the high parts of the bearings, the spring plate is bent as shown in said figure. Manifestly the parts may be reversed, and the boss may be on the bracket instead of the standard.

I have provided a stud c' on the arm which moves in a curved slot o in the bracket and serves to limit the movement of the bracket.

I am aware that the spring plate with raised or cam faces arranged to bring the high parts together when the seat is raised, to compress a spring plate, is not new.

I claim—

In combination, the bracket, the standard having the recessed boss projecting through said bracket, the bolt passing through said boss, the cap on said bolt provided with projections, one of said projections at the center of said cap, fitting the recess in the said boss of the standard, the other projection near the periphery of the cap adapted to engage with a like projection on the said bracket and a spring interposed between the standard and the bracket, substantially as described.

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

ALLEN D. LINN.

Witnesses:
L. T. GIBSON,
F. E. HARRIS.