

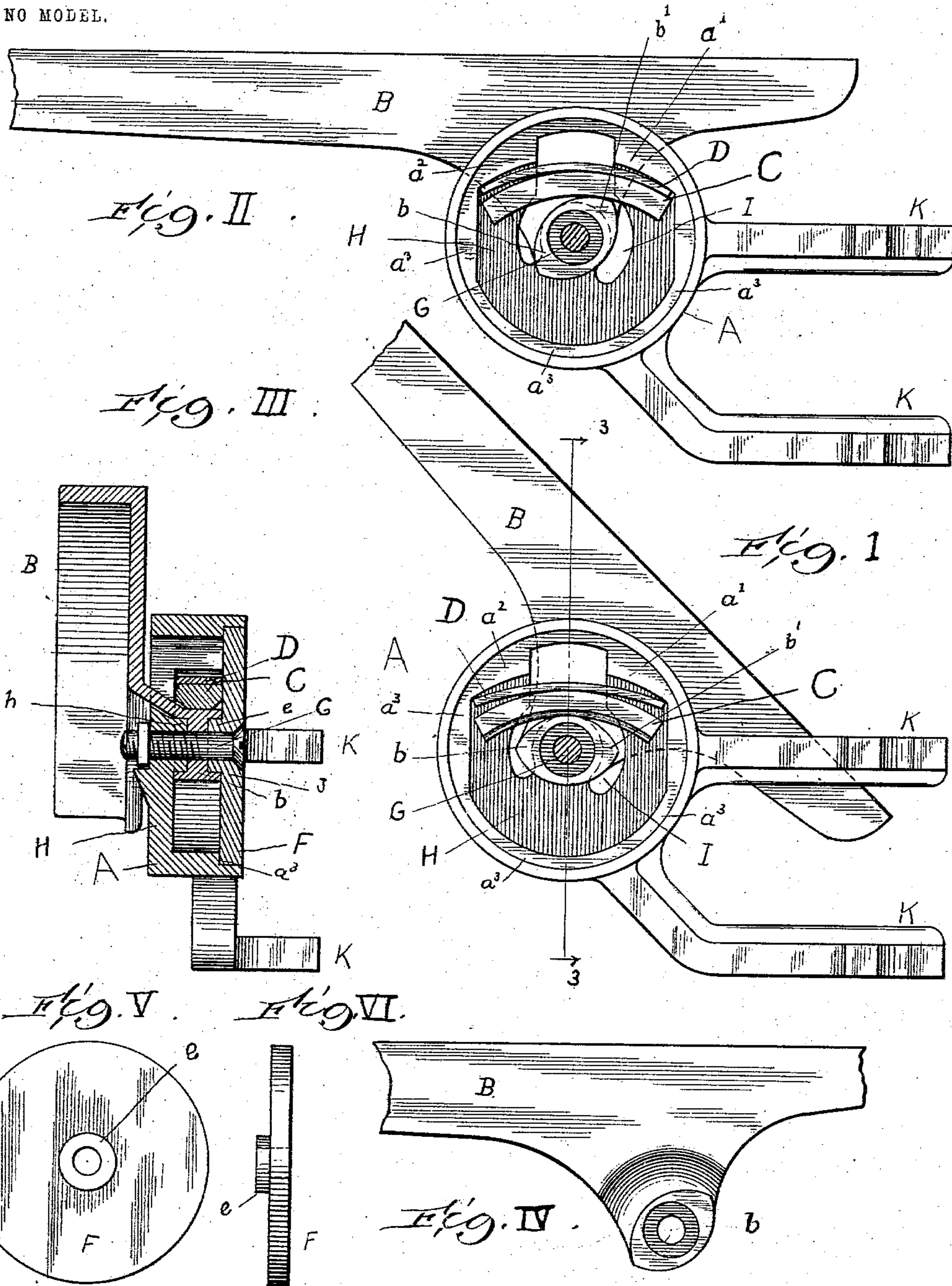
No. 741,000.

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L. D. PETRE.
SEAT HINGE.

APPLICATION FILED AUG. 11, 1902.

NO MODEL.



Witnesses:
Ray White.
Harry C. White.

Inventor:
Lewis D. Petre
By Hiram J. Keck *Att'y.*

UNITED STATES PATENT OFFICE.

LEWIS D. PETRE, OF CHICAGO, ILLINOIS.

SEAT-HINGE.

SPECIFICATION forming part of Letters Patent No. 741,000, dated October 6, 1903.

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To all whom it may concern:

Be it known that I, LEWIS D. PETRE, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Seat-Hinges, of which the following, when taken in connection with the drawings and reference-letters thereon and forming a part hereof, is a full and complete description.

The invention relates to seat-hinges for opera-chairs, school-desks, and other articles of furniture having a hinged seat.

The object of my invention is to obtain a simply-constructed friction-hinge whereby the seat may be easily and noiselessly raised or lowered.

Figure 1 of the drawings is a side elevation of the hinge. Cap F (shown in Figs. 5 and 6) is removed to expose to view an elliptical projection, movable abutment, and a spring placed in the hollow of the immovable part. The seat-arm is shown at the point midway between its position while in use as a seat and when raised. Fig. 2 is also a side elevation of the hinge with cap F removed, so as to show the relative positions of the elliptical projection, movable abutment, and spring when the seat-arm is lowered to its position while in use as a seat. Fig. 3 is a vertical sectional view on line 3 3, viewed in the direction indicated by arrows in Fig. 1, with the cap F attached. Fig. 4 shows the elliptical projection of the seat-arm, portions of the seat-arm being broken away. Fig. 5 is a side elevation of the cap, which has been removed in Figs. 1 and 2. Fig. 6 is a view of the edge of said cap.

A, Figs. 1 and 2, is the immovable part of the hinge, which is a hollow, cast-iron piece, the central part being hollow, so as to admit the elliptical projection *b* of seat-arm B and to allow its turning therein and also sufficiently large to admit a movable abutment C and spring D. Said immovable part A is provided with projections *a'* *a''*, as clearly shown in Figs. 1 and 2.

C is a movable abutment placed upon the elliptical projection *b* and of such shape that when the seat-arm B is in the position indicated in Fig. 1 the under surface of said movable abutment will be tangent to the elliptical projection *b* at its central point. D is a spring,

interposed between said movable abutment C and the small projections *a'* and *a''*, yieldingly holding the hinge in a working position.

F, Figs. 5 and 6, is a cap which is attached to immovable part A by means of bolt G. Said cap can be removed from the immovable part and permits said immovable part to be molded as one piece. Cap F is somewhat smaller than the immovable part A, so that it can be fitted against edges *a''* *a''* *a''*, so that the outer surface will be flush with the edge of said immovable part. The said cap F is provided with a circular shoulder *e*, placed at right angles with it, as shown in Fig. 6. Side H is molded as part of immovable part A and has an opening I, Figs. 1 and 2, sufficiently large to admit the elliptical projection *b* when the hinge is assembled and also large enough to allow the seat-arm B to turn when it is raised or lowered. Said side is also provided with a circular shoulder *h* at right angles thereto, extending into the hollow of immovable part A, similar to and opposite shoulder *e*, as shown in Fig. 3. Shoulder *e* is of such shape and length that it can be inserted into a circular recess J of elliptical projection *b*, as shown in Fig. 3. Shoulder *h* is similar to shoulder *e* and fits into a circular recess on the opposite side of the elliptical projection *b*, (see Fig. 3,) which shows the shoulders extending into circular recesses on both sides of said elliptical projection. Said recesses are at a point midway between the foci of the elliptical projection. A small bolt G passes through a hole in the elliptical projection *b*. Said bolt also passes through holes in shoulders *e* and *h* and attaches cap F with immovable part A. It should be noted in this connection that said bolt G is used for the purpose of attaching the cap to the immovable part A exclusively and does not provide a means upon which the elliptical projection *b* rests or turns. The said bolt may be much smaller than the hole in the elliptical projection *b*, provided it is sufficiently large to hold the cap to the immovable part A.

K K are means whereby the hinge may be attached to a seat-standard, or, if desired, they may be discarded and the immovable part be cast as part of a seat-standard, as in the case of a school-desk.

In lowering the seat-arm B from the posi-

tion shown in Fig. 1 to its position while in use as a seat, as shown in Fig. 2, the elliptical projection *b* partially revolves around shoulders *e* and *h* within the circular recesses therein, and *b'* of said elliptical projection *b* gradually raises and with a constantly-increasing pressure forces the movable abutment C upward. Said movable abutment is constantly retarded in its upward motion by spring D until the spring is forced against projection *a'*, thus causing the turning motion to stop, and holds the seat-arm in its proper position, as shown in Fig. 2. During the turning of the elliptical projection *b* the tension of spring D holds the elliptical projection *b* tangent to the circular shoulders *e* and *h* within the circular recesses therein. When the seat-arm B is raised, it is stopped by the opposite end of the elliptical projection *b*, forcing the spring D against projection *a''*. In a similar manner it is stopped and held in proper position.

It will be readily seen that the constantly-increasing resistance to the movable abutment C by spring D prevents slamming of the seat when the seat-arm is either raised or lowered and that spring D also insures perfect contact between the bearings of the hinge during the turning motion of the elliptical projection *b*, and thus prevents any rattling sound.

In assembling the hinge the elliptical projection *b* is passed through the opening I of the side H into the hollow of immovable part A, so that the circular shoulder *h* will extend into a circular recess of the elliptical part. The spring D is then placed against projections *a'* and *a''*, after which movable abutment C may be inserted. Cap F is then placed against edges *a³ a³ a³*, so that shoulder *e* will extend into circular recess J of elliptical part *b*, after which bolt G may be passed through the holes in the shoulders *e* *h* and elliptical projection *b*.

I claim—

1. The combination of a hollow immovable

part having small projections extending into said hollow, and also provided with a circular shoulder extending into said hollow at right angles to a side of the said immovable part; a cap, attached to the immovable part by a bolt and supported at its circumference on the immovable part, and having a circular shoulder extending into the hollow of the immovable part at right angles to the said cap; a seat-arm, provided with an elliptical projection, having circular recesses on both sides of the elliptical projection, into which the circular shoulders extend and support the seat-arm; a movable abutment placed upon the elliptical projection within the hollow of immovable part; a spring interposed between the immovable abutment and projections of the immovable part, and a bolt attaching the cap to the immovable part substantially as and for the purposes described.

2. The combination of a hollow immovable part A, having projections *a'* and *a''*, also having a circular shoulder *h* at right angles to side H of the immovable part, extending into the said hollow; a cap F supported by the edges *a³ a³ a³* of the immovable part A and having a circular shoulder *e*, extending at right angles thereof into the hollow immovable part A; the seat-arm B provided with the elliptical projection *b* having recesses on each side thereof, placed within the hollow of the immovable part A, and supported by the circular shoulders *e* and *h* engaging such recesses; the movable abutment C, placed within the central opening of the immovable part A, upon the elliptical projection *b*; the spring D interposed between the movable abutment C and the projections *a'* and *a''*, and the bolt G connecting and holding the cap F to the immovable part A, substantially as and for the purposes described.

LEWIS D. PETRE.

Witnesses:

WILL H. CLARK,
HATTIE B. LEHMAN.