No. 723,544. PATENTED MAR. 24, 1903.

L. D. PETRE.

SEAT HINGE.

APPLICATION FILED JAN. 21, 1903.

NO MODEL.

Fig. 1

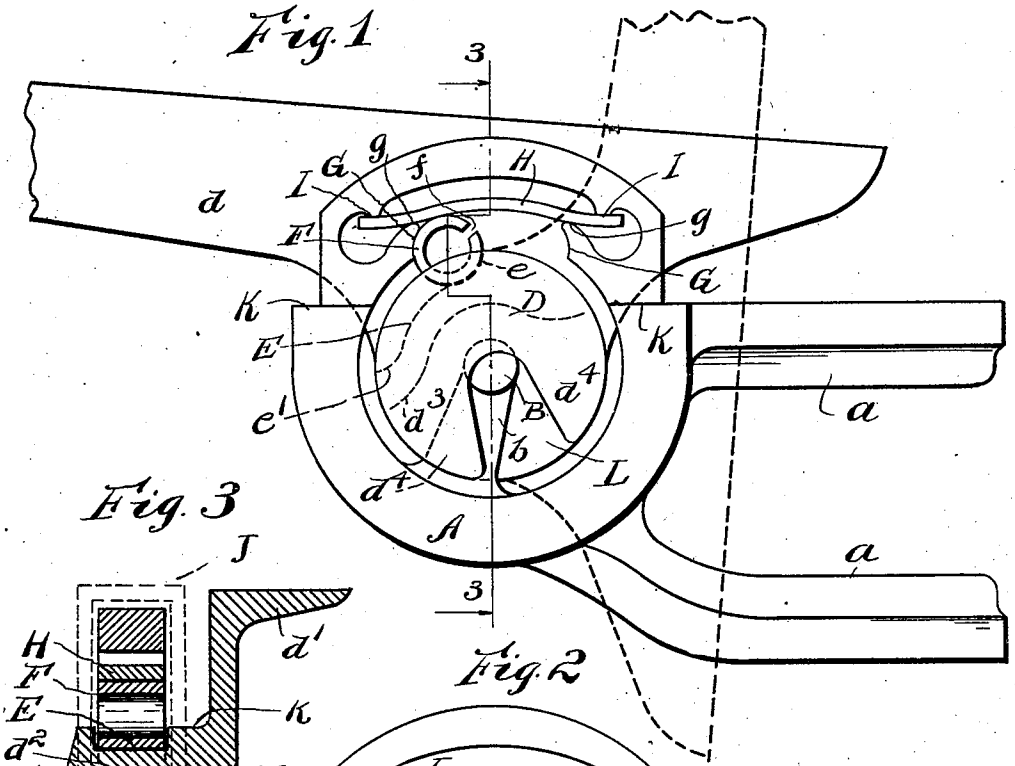


Fig. 3

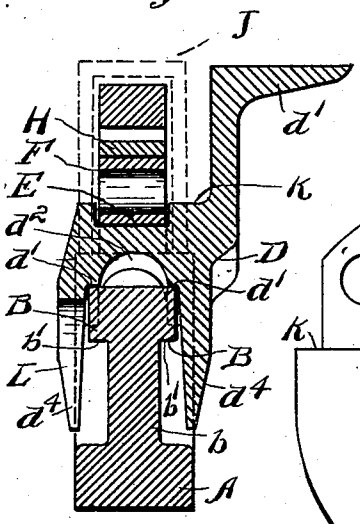


Fig. 2

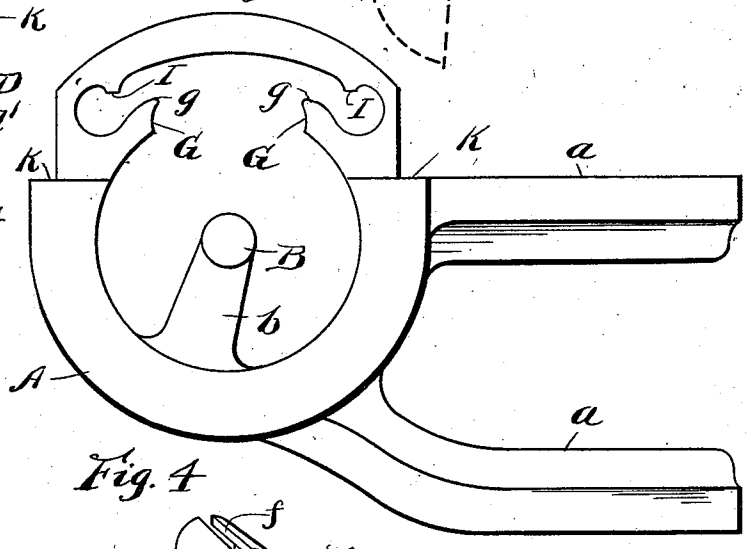
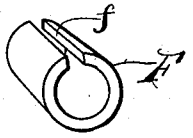


Fig. 4



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LEWIS D. PETRE, OF CHICAGO, ILLINOIS.

SEAT-HINGE.

SPECIFICATION forming part of Letters Patent No. 723,544, dated March 24, 1903.

Application filed January 21, 1903. Serial No. 140,053. (No model.)

To all whom it may concern:

Be it known that I, LEWIS D. PETRE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Seat-Hinges, of which the following, when taken in connection with the drawings and reference characters thereon, accompanying and forming a part hereof, is a full and complete description, sufficient to enable those skilled in the art to which it pertains to understand, make, and use the same.

This 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 hinge whereby the seat may be easily and noiselessly raised and lowered and a hinge wherein there is no necessity of using a bolt in its construction, and at the same time to obtain a hinge the principal parts of which may be molded as are parts of the standard and seat-arm of the chair, and further to obtain a construction of the kind named wherein the molded parts of the hinge will not require any machine finish, but, on the contrary, the variation of the molded parts necessarily incident to variation in the rappage of the patterns in the mold will not affect the operation of the apparatus or require machine-work to be done thereon.

A further object of the invention is to obtain a hinge of the character described wherein the parts which are not molded are easily obtained of durable material and at small cost.

A further object of the invention is to obtain a hinge which is readily assembled, durable, and not liable to get out of order.

In the drawings referred to, Figure 1 is a side elevation of the seat-hinge embodying the invention with a cover of the immovable part (such cover being indicated by broken lines in Fig. 3) removed to expose to view the movable abutment of the hinge and the parts adjacent thereto. Fig. 2 is a side elevation of the immovable part of the hinge which is attached to the standard of the chair, such immovable part forming the fulcrum of the movable abutment of the hinge and the base for the parts adjacent to such movable abutment with the cover (indicated in Fig. 3 by the broken lines) removed. Fig. 3 is a vertical sectional view on line 3 3 of Fig. 1 viewed in the direction indicated by the arrows. Fig. 4 is a perspective view of a spring-roller (shown in end elevation in Fig. 1 and in cross-section in Fig. 3) forming an element of this invention.

One of the primary purposes of this invention is to obtain a spring-stop of determined resiliency and a stop which when such resiliency is obtained will thereafter constitute a rigid stop, thus securing all the advantages of a spring-stop to the movable abutment of the hinge and at the same time obtaining the durability and other advantages resulting from having a rigid stop.

A reference-letter applied to designate a given part is used to indicate such part throughout the several figures of the drawings wherever the same appears.

A, Figs. 1, 2, and 3, is the immovable part of the hinge. Immovable part A is attached to the standard of the seat by means of the projecting lugs *a a*. (Shown in Figs. 1 and 2.)

B is the fulcrum on which the movable part D of the hinge turns, such fulcrum B forming a part of the immovable part A of the hinge and connected thereto by the web *b*, web *b* and fulcrum B being integral with the remainder of part A. The ends of the fulcrum B extend beyond the webbing *b*, as is shown at *b' b'*, Fig. 3, of the drawings, and such extended ends form the point of contact between such fulcrum B and movable part D of the hinge.

d is the part or portion of the movable part D of the hinge to which is attached the seat of the chair.

d' d', Fig. 3, are shoulders on movable abutment D, resting on and in contact with the fulcrum B, and d^2 (see Fig. 3 and the dotted line d^3 in Fig. 1) is a recess between the shoulders *d' d'*, such recess being a continuation of the hollow part formed by the sides d^4 d^4 of the movable abutment D. The recess thus formed permits of the required movement of the movable abutment D in the raising and lowering of the seat of the chair.

E is a runway on the periphery of the movable abutment D for the spring-roller F. The ends *e* and *e'* of the runway E are of substantially the same radius as is the spring-roller F. The spring-roller F is preferably constructed of spring-steel tubing having a lon-

gitudinal cut on one of the sides thereof, as at *f*, Figs. 1 and 4. When the edges thus obtained in the spring-roller F are brought together by compression of the roller, as hereinafter described, such roller is thereafter a rigid roller.

G G, Figs. 1 and 2, are abutments on the immovable part A of the hinge, such abutments forming stops against which the steel roller F is forced when the movable part D of the hinge is at either end of its movement by the ends *e e'*, respectively, of the runway E. The faces of the respective abutments G G, against which the roller F is forced, as described, are preferably made convex, the radius thereof being substantially the same as the radius of the spring-roller F. When the seat is moved up and down, the spring-roller F is alternately caught and pinched between the ends *e e'* of the movable abutment D and the abutments G G of the immovable part of the hinge, respectively, and by the blow of a rapid movement, as well as by the weight of a person on the seat of the chair, such spring-roller is compressed until the edges of the slot *f* therein meet. A rigid stop is thereafter obtained.

H, Figs. 1 and 3, is a guard holding the spring-roller F in place on runway E while the seat is being raised or lowered. Such guard H may be a strip of sheet metal, which can be slid sidewise into place after the movable part D of the seat has been placed on the fulcrum B and the spring-roller F put on the runway E. The several parts of the hinge are thus held in proper position by the guard H.

I, Figs. 1 and 2, are abutments on part A of the hinge against which, as well as against the upper edges *g g* of the abutments G G, the guard H is in contact when in place. In order to take up for any irregularity in runway E, due to the molding of part D, the guard H may preferably be made of spring-steel.

J (see broken lines in Fig. 3) is a cover for the upper portion of the immovable part A, such cover resting on the shoulder K of such immovable part A of the hinge.

The hinge may be taken down by removing the cover J, the guard H, and spring-roller F and then raising part D off the fulcrum B and moving it sidewise, the webbing *b* passing through the recess L between the sides d^4 d^4 on one side of such abutment D, such recess being shown in Figs. 1 and 3 of the drawings.

To assemble the hinge, the part D is connected to part A by moving it sidewise relative to the fulcrum B on such part A, such fulcrum passing through the recess L, and then allowing such part D to rest on the fulcrum B, as hereinbefore described. The spring-roller F is then placed on the runway E and the guard H forced sidewise into position over the spring-roller F between the abutments I I and the upper edges *g g* of the abutments G G. Cover J is then dropped over the upper portion of the part A to rest on the shoulders K K, thus preventing side movement in guard H. The seat can then be raised and lowered and as it reaches the limit of its movement the spring-roller F will be compressed, as hereinbefore described, between the abutments G G and the ends *e e'* of the runway E.

The movement of the seat will be substantially noiseless, and by means of the construction herein described any variation of the parts A and D, (particularly the variation of the fulcrum B and runway E,) due to a variation in the rappage of the pattern in the mold, (usually sand,) is taken up, so that no machine-work is required on the hinge, while at the same time the several parts are in such close contact as to prevent movement and resulting noise. It is evident that in the movement of the spring-roller F from one of the abutments G toward the other of such abutments any inequality of the runway E relative to the guard H will cause corresponding compression in the spring-roller F where the guard H is not of spring metal and that where such guard H is of spring metal any variation or irregularity in the runway E (due to a variation in rappage) will be taken up jointly by the spring-roller F and such guard H.

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

1. In a seat-hinge, the combination of an immovable abutment, a fulcrum and a standard to the fulcrum, such fulcrum and standard integral with the immovable abutment, a movable abutment provided with wings and one of such wings provided with a recess therein to permit the movable abutment to be slid sidewise onto the fulcrum, a runway on the movable abutment, a spring-roller on the runway, stops on the immovable abutment against which the spring-roller is forced when the movable abutment is moved to the end of its travel, and a yielding guard to maintain the spring-roller on the runway: substantially as described.

2. In a seat-hinge, the combination of an immovable abutment, a fulcrum and a standard to the fulcrum, a movable abutment provided with wings and one of such wings provided with a recess therein to permit the movable abutment to be slid sidewise onto the fulcrum, a runway on the movable abutment, a spring-roller on the runway, stops on the immovable abutment against which the spring-roller is forced when the movable abutment is moved to the end of its travel, and means to hold the spring-roller on its runway: substantially as described.

LEWIS D. PETRE.

In presence of—
CHARLES TURNER BROWN,
AUGUSTA DETL.