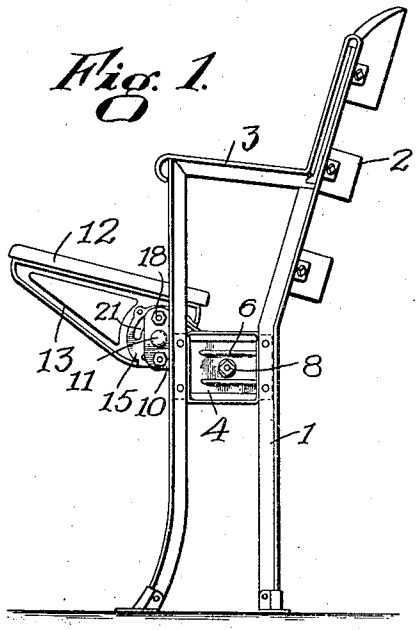
C. H. HILL.

SEAT HINGE FOR ARTICLES OF FURNITURE.

APPLICATION FILED AUG. 21, 1916.

1,290,557. Patented Jan. 7, 1919.

Fig. 1.



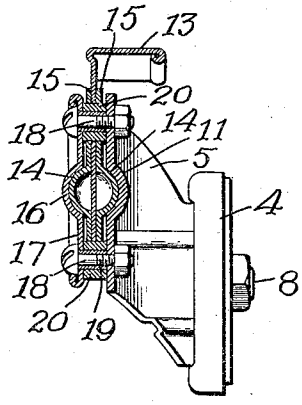
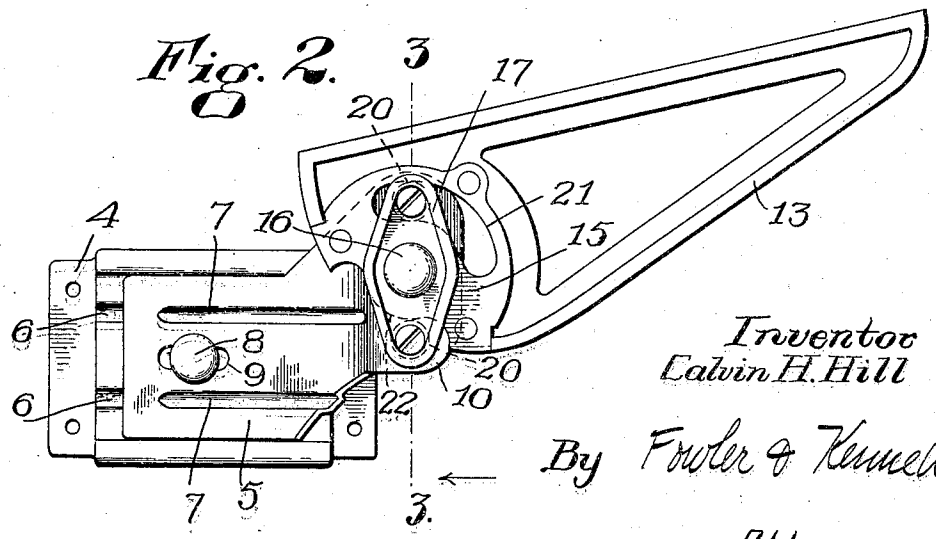


Fig. 3.

Fig. 2.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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SEAT-HINGE FOR ARTICLES OF FURNITURE.

1,290,557. Specification of Letters Patent. Patented Jan. 7, 1919.

Application filed August 21, 1916. Serial No. 116,065.

To all whom it may concern:

Be it known that I, CALVIN H. HILL, a citizen of the United States, residing at Oak Park, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Seat-Hinges for Articles of Furniture, of which the following, taken in connection with the accompanying drawings, is a specification.

The present invention relates to a seat hinge for articles of furniture, and has particular reference to such a hinge for use in connection with chairs of metallic frame construction, such as are provided in theaters, amusement halls, and the like.

The invention resides in a form of hinge peculiarly adapted for the folding seats of such chairs, the same being easily and cheaply manufactured from pressed or stamped metal, and being readily capable of assembling and attachment to chairs of this type. More particularly, the invention resides in a construction of metallic hinge adapted to cushion the folding and unfolding movements of the seat without the interposition of the usual devices employed for this purpose, as will be hereinafter set forth.

The invention is fully described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of a chair equipped with a seat hinge embodying the invention.

Fig. 2 is an enlarged side view of the parts constituting said hinge.

Fig. 3 is a section on the line 3—3, Fig. 2.

Like reference numerals refer to like parts in the different figures.

I have shown my invention in connection with a well known type of chair, such as shown in Fig. 1, the same being constituted by a pair of upright side frames 1, 1, between which is supported, in any well known manner, the chair back 2. Below each arm rest 3 of the chair, only one being shown in Fig. 1, each side frame 1 provides a horizontal seat supporting member 4, which is used in the present instance for the attachment of my improved seat hinge. The latter is obviously provided in duplicate in connection with each side frame 1, and a description of one set of parts will therefore be sufficient.

In the preferred embodiment of my invention, as applied to a chair of the present type, a curved plate 5 is attached to each seat supporting member 4. Preferably the member 4 is provided with grooves 6, 6, which receive corresponding projections 7, 7, on the face of plate 5, to retain the latter rigidly in position when the bolt 8, used to join the parts, is tightened. The bolt 8 passes through an elongated slot 9 in the plate 5, to permit adjustment of the hinge and seat toward and from the back of the chair. The plate 5 is curved inwardly, and at its free end provides a vertical portion 10 having near its center, on the inner side, a substantially hemispherical depression 11. The chair seat 12 is supported by a pair of brackets 13, each of which coöperates with one of the plate portions 10, 10, to form the seat hinge of the present invention. To this end the rear portion of the bracket 13 is provided on each side with an oppositely curved hemispherical projection 14, 14, the same preferably being formed by attaching suitably stamped or pressed out plates 15, 15, upon each side of bracket 13.

One of the projections 14 seats in the recess 11 of plate 5; the other is received within a corresponding hemispherical recess 16 formed in a detachable cover plate 17 which is held against the outer side of the bracket 13 by means of screw bolts 18, 18, passing through the flat portion 10 of the plate 5.

Each screw bolt 18 carries a short bushing 19 which enters the hole through the cover plate 17, and bears at its other end against the inner face of plate 5. Mounted on said bushings 19 in the space between the plates 5 and 17 are rollers 20, 20; the upper roller 20 is disposed in a curved slot 21 of the bracket 13, and the lower roller 20 rolls against the curved lower edge 22 of said bracket. The outer edge of slot 21 is concentric, for the greater portion of its length with the axis of the several projections and recesses 11, 14, and 16, but near its ends said outer edge is slightly eccentric to said axis, being formed on a smaller radius. As a result the upper roller 20 travels freely, in rolling contact with the edge of the slot 21 until, in the folding or unfolding movement of the chair seat, it is reached by the end portions of smaller diameter. Likewise the curved edge 22 is formed to travel freely upon the lower roller 20, except at the ends

thereof which are formed on a slightly larger radius.

As a result of this construction the bracket 13 is at all times in contact with each of the rollers 20, that is to say, the bracket is held from any displacement or rocking movement, and the support afforded by said rollers is in all respects equivalent to the support afforded by a roller bearing. Moreover, by reason of the eccentric curvature at each end of the slot 21 and curved edge 22, any forcible impact of the bracket 13 against the rollers 20 is absolutely prevented. This is obviously true since at either end of the folding or unfolding movement of the seat the rollers 20 will gradually bind or wedge against these edges of eccentric curvature, thus relieving the necessity for any cushioning devices, such as are usually provided in hinges of this type.

Obviously, these sections of eccentric curvature, for coöperation with the rollers 20, 20, may be provided upon either the inner or outer edges of the slot 21, or at the ends of the curved edge 22. If desired, all of these edges may be thus made eccentric, at each end, but it will be sufficient, however, if two such eccentric sections be formed, one at each limit of movement of the bracket, on either edge of the slot 21 or on the curved edge 22. I am aware that it has been proposed to employ a single roller carried by one member of a seat hinge and contacting with a surface on the other member curved concentrically with the axis of the hinge, and I do not claim such a construction. By the employment of two rollers on diametrically opposite sides of the axis, the accurate fitting of the pivotal connection of the seat hinge is avoided and I secure the advantages of a roller bearing pivotal connection.

I claim,

1. In an article of furniture, a framework, a stationary bracket attached thereto, a swinging seat supporting bracket pivotally held on said stationary bracket, a pair of rollers carried by said swinging bracket on diametrically opposite sides of its pivotal axis, and a pair of surfaces carried by said stationary bracket curved concentrically with the pivotal axis of said swinging bracket and in contact throughout their length with said rollers.

2. In an article of furniture, a seat hinge, comprising a framework, a seat supporting member secured to said framework, having a hemispherical recess, a cap piece having an oppositely curved hemispherical recess, a pair of bolts attaching said cap piece to said seat supporting member, bushings on said bolts between said seat supporting member and the bolt heads, a pair of rolls on said bushings, and a seat bracket interposed between said seat supporting member and said cap piece, having hemispherical projections on opposite sides entering said recesses, said bracket being provided with concentrically curved edges in contact with said rolls.

3. In an article of furniture, a seat hinge, comprising a seat supporting member, a seat bracket pivotally connected with said seat supporting member, a pair of rolls carried by said seat supporting member on substantially opposite sides of said pivotal connection, said seat bracket having two curved edges contacting with said rolls, said edges being curved concentrically with the axis of said pivotal connection at their central portion, but one or both of said edges having eccentric sections at their ends.

Dated this 29th day of July, 1916.

CALVIN H. HILL.

Witnesses:

FRANK A. MCKEE,

F. J. WRIGHT.

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

DISCLAIMER.

1,290,557.—*Calvin H. Hill*, Oak Park, Ill. SEAT HINGE FOR ARTICLES OF FURNITURE. Patent dated January 7, 1919. Disclaimer filed June 25, 1928, by the assignee by mesne assignments, *Heywood-Wakefield Company.*

Hereby enters this disclaimer to claim 1 of Patent No. 1,290,557, which is in the following words:

"In an article of furniture, a framework, a stationary bracket attached thereto, a swinging seat supporting bracket pivotally held on said stationary bracket, a pair of rollers carried by said swinging bracket on diametrically opposite sides of its pivotal axis, and a pair of surfaces carried by said stationary bracket curved concentrically with the pivotal axis of said swinging bracket and in contact throughout their length with said rollers."

[*Official Gazette July 17, 1928.*]