3 Sheets—Sheet 1.

J. L. KAPPLE.

FOLDING SEATS.

No. 182,279. Patented Sept. 19, 1876.

Fig. 1.

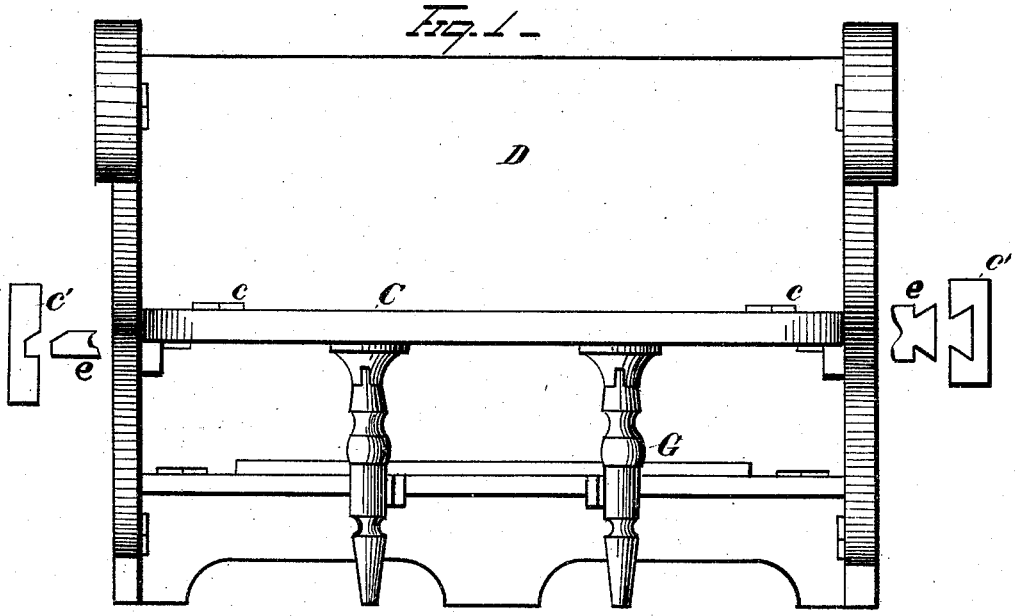

Fig. 2

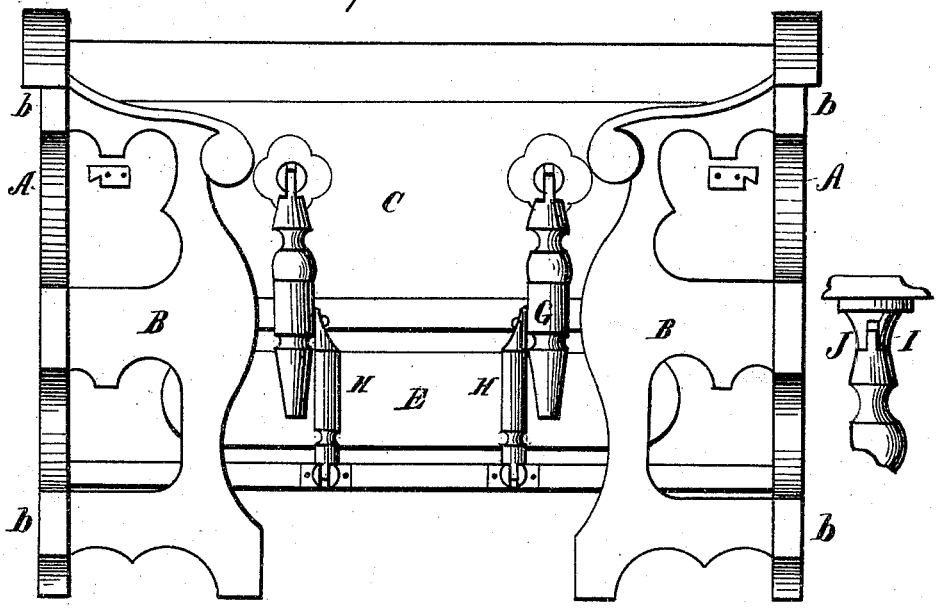

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Fig. 3.

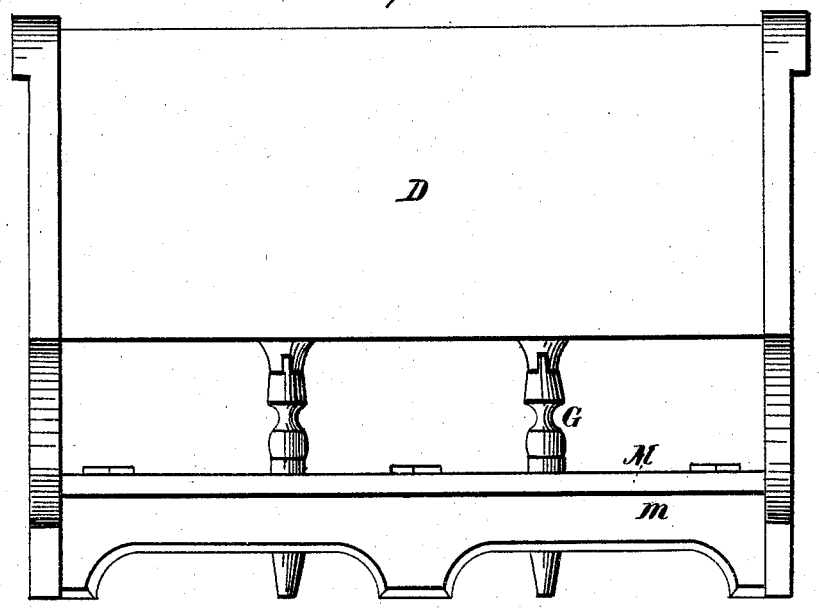

Fig. 4.

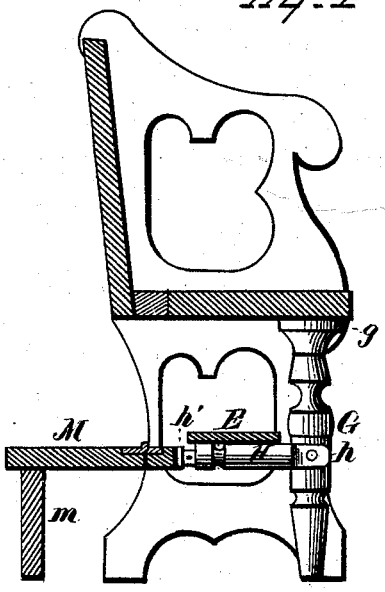

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Fig. 5

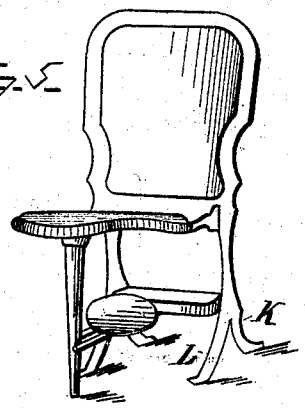
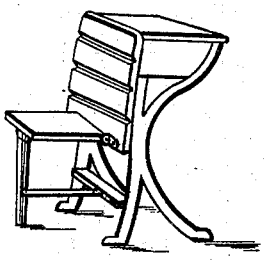


Fig. 6



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UNITED STATES PATENT OFFICE.

JOHN L. KAPPLE, OF ERIE, PENNSYLVANIA.

IMPROVEMENT IN FOLDING SEATS.

Specification forming part of Letters Patent No. **182,279**, dated September 19, 1876; application filed September 16, 1875.

To all whom it may concern:

Be it known that I, JOHN L. KAPPLE, of Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Folding Seats; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in seats, and more particularly to that class of seats that fold up so as to occupy a small space. My invention consists in the parts and combinations, as hereinafter more fully set forth and claimed, and is designed for use in halls, churches, schools, &c.

In the drawings, Figure 1 is a front view of a seat embodying my improvements. Fig. 2 represents the same seat when folded up and not in use. Fig. 3 is a rear elevation, and Fig. 4 a cross-section, of my invention, while Fig. 5 represents same as applied to an opera-chair, and Fig. 6 as applied to a school-desk.

There are several requisites in a good folding seat for all purposes. They should, if they have side arms, be provided with appliances for folding the said side arms against the seat when folded up, so that the said side arms shall not project out and form an obstruction to persons passing. They should, when folded, present a high open space beneath, to facilitate sweeping the apartment. If there are side arms or supports, they should be provided with ready means for making a rigid attachment to the seat-bottom, so as to avoid springing out of place when in use. If a hat-support is used, then it too should fold up out of the way, and under all circumstances the seat should have leg-supports beneath, that rest squarely upon the floor, so as to prevent the weight of a person from acting as though upon a lever to turn the seat over forward.

A A are suitable uprights or standards, for supporting the structure, whether in use or folded. B B are side arms or supports, which are hinged at *b b* to the uprights A. C C is the seat-bottom hinged at *c c* to the back of the seat, and arranged to fold upward against the said back. D is the seat-back. E is a hat rest or rack beneath the seat, and may be hinged to the frame of the seat. G is a leg-support beneath the seat-bottom, and is hinged at *g* to the bottom of the seat. To it at *h* is hinged a brace or support, H, and this brace is also hinged at *h'* to the frame of the seat. The brace H may support the hat-rest E, and preferably in practice does support it.

The operation of the device is as follows: The seat being folded, the arms are swung outward into their proper positions, the seat-bottom is then turned down into a horizontal position, and in so doing automatically attaches itself to the arms. In coming down, the seat-bottom carries with it the leg-support G, which is guided to its proper position by the brace H, and as the brace H arrives at its proper place, it brings into position the hat-rack E, and the seat is all ready for use, and it will be noticed that the only operation to perform is simply to swing out the arms B, and turn down the seat-bottom C.

The uprights as well as the side arms may be framed from any suitable material. If wood, it may be solid, paneled or open, so if made of metal, it may be of any fanciful design, and may or may not be suitably upholstered.

On the arms B B are lugs *c' c'*, which are provided with elongated slots, substantially as shown in the separate view in Fig. 1. On the ends of the seat-bottom are lugs or pins *e e*. These pins have diminished ends or points, so that as the seat-bottom is lowered the pins go into the slots in the lugs *c' c'*, and draw the arms snugly against the ends of the seat-bottom. Instead of employing the slots and pins, as above set forth, I have also employed a dovetail mortise on the lugs *c' c'*, and dovetail tenons on the ends of the seat-bottom, as shown at the other side in Fig. 1.

The seat-bottom and back are each formed in any suitable manner, either upholstered or not, as desired, and either solid or open. The particular way of forming them forms no particular part of my invention, as I propose to vary the appearance to suit the taste of the purchaser.

The leg-supports G may be of any suitable number, and located at proper distances apart.

They are made strong, and are hinged to the seat bottom by hinges of any proper construction; but I have a peculiar hinge that I generally employ. That portion which attaches to the leg has a wedge-shaped tongue that projects into a corresponding wedge-shaped fork that is attached to the seat bottom, so that when the two are pivoted together, the leg will, as it is brought down into position, cause its tongue I to project into and wedge itself in the forked part J of the hinge. This makes a solid joint, and one that will not rattle or become shaky. A representation of this hinge is shown at the right in Fig. 2.

This invention is applicable to seats wherever employed; and in Fig. 5 is represented an opera-chair made in accordance with the same principle. In the opera-chair shown there are no side arms; but side folding arms may, if desired, be placed thereon. The backs and seats are shown as upholstered; but they may be made in any suitable way.

The standards or uprights are made as follows: The rear part K is made in a single piece or casting, so as to be suited for all emergencies, whether the floor upon which they are to be placed be flat or inclined; but in order to suit the supports to the usual varying inclinations of an opera-house or theater floor, I make the front part of the leg or upright L separate from the part K, so that by adjusting it higher or lower upon the part K, the chair is readily suited to any inclination of the floor, and the structure is made very secure and stiff. The leg renders the seat steady and strong, and the necessity of fastening the seats together at the back, as is ordinarily practiced in order to give the requisite stability to the row of seats, is avoided.

In Fig. 6 the invention is represented as adapted to a school-desk, except the hat-rest is not here used, though it may be, if desired. The front of a desk forms the back of the seat in front of it. The bottoms and their supporting-legs fold as before. The leg gives additional support, and receives the weight directly, thus avoiding the jarring of the desk back of it, which is always consequent on a change of position of a scholar when the seats without these leg-supports are used, and there is no liability of wrenching the desks from their supports or fastenings. In all these cases the bottom ends of the leg-supports should be muffled with rubber or otherwise to prevent noise.

In church seats and elsewhere, there may be provided folding foot-rests M, which may be separate from the hat-rests, and may or may not project out back of the seat; and a folding support, *m*, may be arranged to drop down beneath the foot-rest, as shown in Fig. 4.

It is therefore apparent that my invention is equally applicable to seats of every description; and I do not want it understood that it is only applicable to the seats shown, but that it comprehends broadly a folding seat with or without arms, and which arms may or may not fold, the seat-bottom being provided with folding leg-supports that fold with the seat-bottom, and either with or without foot-rests and hat-supports.

This seat may also be made in the nature of a wall-seat, in which condition the back may be dispensed with entirely, and the seat-bottom and arms be attached directly by hinges to the wall; or the erect seat-back may be secured to the wall by proper fastenings. In this way projecting feet or uprights may be avoided entirely, and render the device peculiarly adapted to side aisles of churches, &c.

What I claim is—

1. A seat formed with a stationary back and uprights, A, a folding seat-bottom, C, hinged leg-support, and a swinging brace, the latter pivoted to a rigid cross-bar, substantially as and for the purpose set forth.

2. The combination, with the folding seat-bottom C and folding leg-support G, of folding side arms or supports B, substantially as and for the purposes described.

3. In combination, with the side arms provided with the slotted lugs *c' c'*, the seat-bottom C, provided with tapering lugs or pins *e e*, substantially as set forth.

4. The combination, with the seat-bottom and leg-support, of the wedge-hinge I J, substantially as set forth.

5. The combination, with the folding seat-bottom and hinged leg-support, of the hat-rest E, the latter supported on a swinging brace that is pivoted to a rigid cross-bar, substantially as and for the purpose described.

6. The seat having sides and seat-bottom adapted to fold against the seat-back and folding foot-rest, substantially as and for the purpose described.

7. A seat constructed with folding sides, seat-bottom, hat-rest, and foot-rest, all arranged to operate substantially as and for the purposes set forth.

8. The combination, in a single seat, of folding seat-bottom, folding leg-support, folding hat-rest, and folding side arms, substantially as and for the purposes described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN L. KAPPLE.

Witnesses:
FRANCIS TOUMEY,
H. T. HOWER.