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J. DELPH & W. A. BRADFORD.

SCHOOL SEATS AND DESKS.

No. 179,472. Patented July 4, 1876.

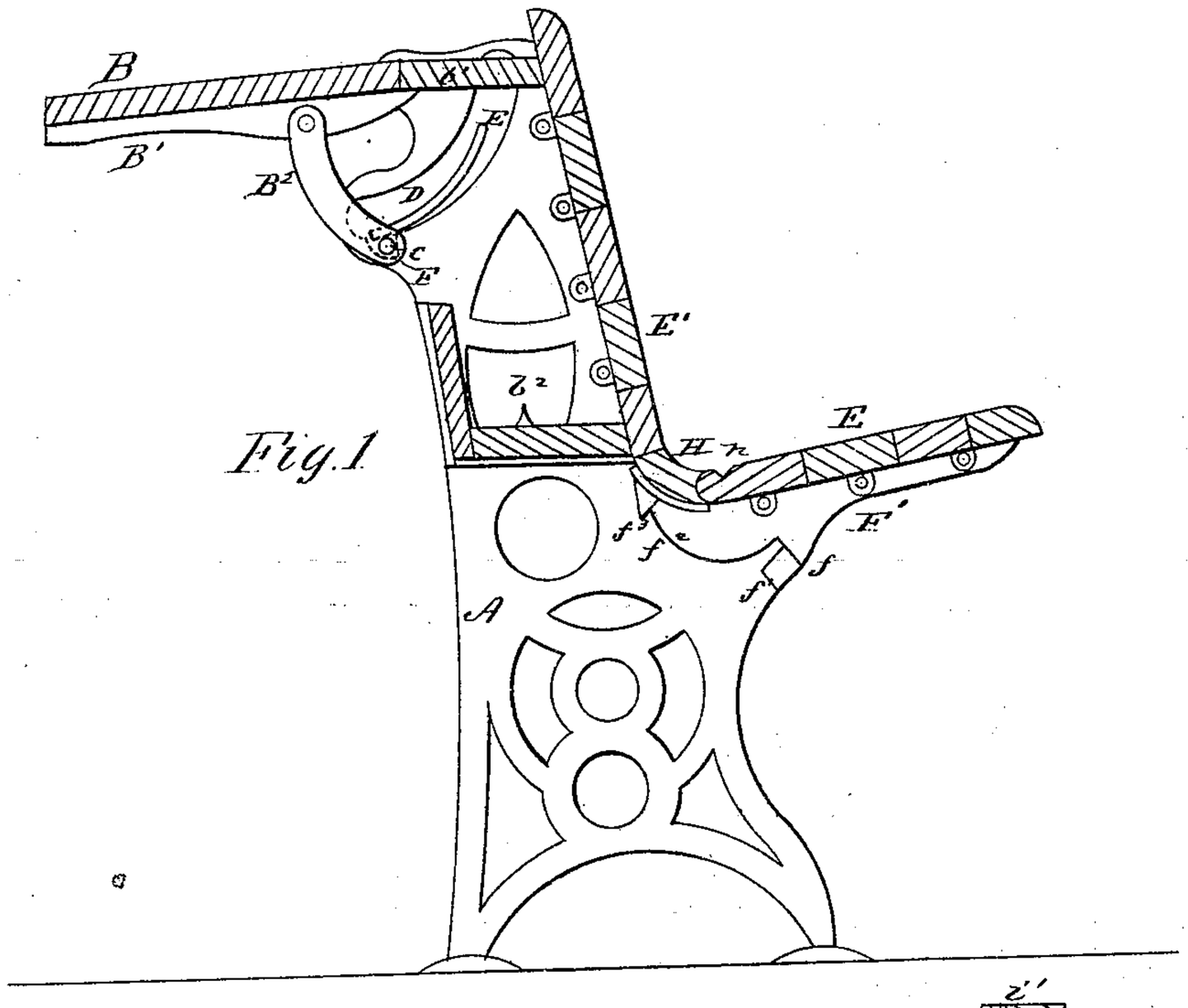

Fig. 1

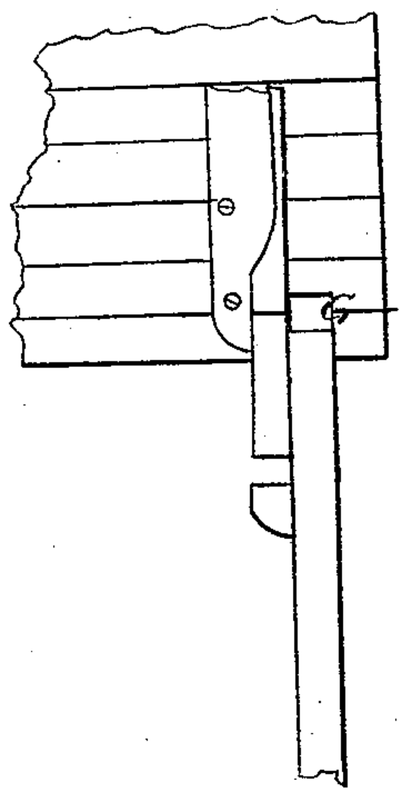

Fig. 2

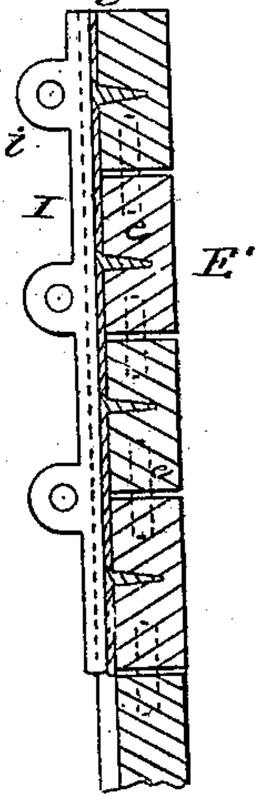

Fig. 3

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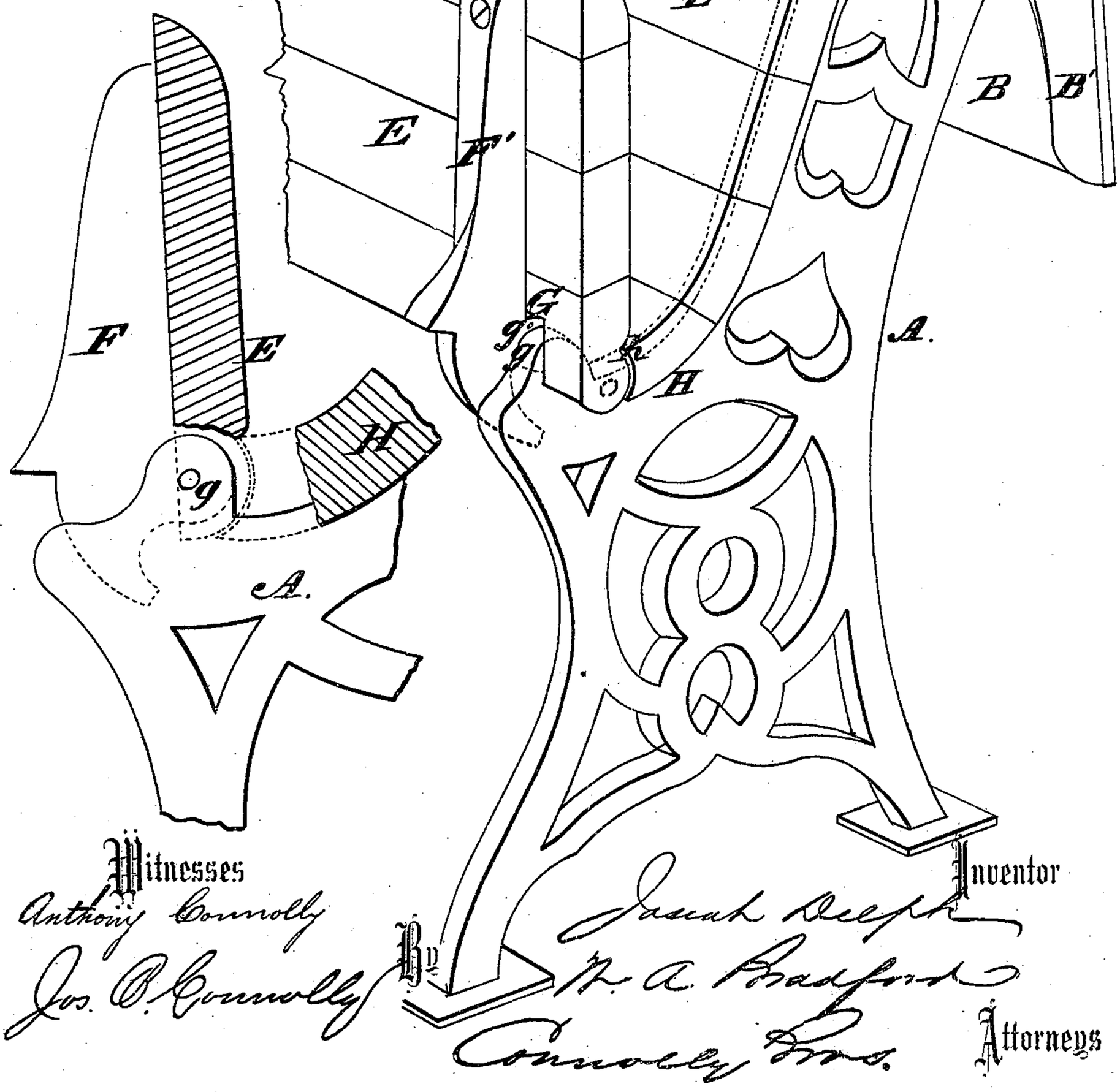
Fig. 4.

Fig 5.



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UNITED STATES PATENT OFFICE.

JOSIAH DELPH AND WILLIAM A. BRADFORD, OF GOSHEN, INDIANA, ASSIGNORS OF ONE-HALF THEIR RIGHT TO L. H. NOBLE & SON, OF SAME PLACE.

IMPROVEMENT IN SCHOOL SEATS AND DESKS.

Specification forming part of Letters Patent No. **179,472**, dated July 4, 1876; application filed May 1, 1874.

To all whom it may concern:

Be it known that we, JOSIAH DELPH and WILLIAM A. BRADFORD, of Goshen, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in School Seats and Desks; and we 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, in which—

Figure 1 is a vertical transverse section. Fig. 2 is a bottom view of a portion of the seat. Fig. 3 is a vertical section through back-slats. Fig. 4 is a perspective view, showing one end of our combined seat and desk. Fig. 5 is a vertical section and detail view.

This invention has relation to a school desk and seat combined; and consists in the novel construction and arrangements of parts, as hereinafter more fully described, having reference to, first, certain devices for locking and unlocking the desk-leaf automatically when the latter is raised; secondly, the means for securing the slats of the back to the sides of the desk—to wit, the sheet-metal flanged plates secured within transverse grooves to the slats by screws, and afterward attached to the castings by lateral rails or bolts.

Referring to the accompanying drawing, A designates the side castings, of a form adapted to the reception of the parts essential to a combined desk and seat. B is the desk-leaf, hinged to and between the side castings A, at the upper rear portion. b^1 is the leaf-shelf, and b^2 a recess below the latter, to contain books and school articles. The recess b^2 is closed by the leaf when the same is lowered. B^1 represents the hinge-plates of the leaf, secured to the under side thereof. B^2 are curved arms pivoted to said plates, and extending inwardly toward the body of the desk. The arms B^2 are provided with studs *c*, which, if desired, may be provided with rollers to lessen friction. Said studs enter segmental channels D, curving upwardly from the rear edges of the casting A, as shown. Within said channels and to the castings are pivoted curved guides E, the lower ends of which nearly, but not quite, reach the ends of the channels. F represents notches formed in the lower walls of the channels, near the rear ends thereof, and in such positions that when the pivoted guides fall, their ends will partly enter and cover said notches, which are primarily adapted to receive the studs projecting from the pivoted arms B^2.

The operation of the leaf is as follows: When it is lowered the arms B^2 pass upward through the channels D beyond the ends of the guides. In raising the leaf the arms B^2 are drawn down through the channels, the studs or rollers passing along the lower edge of and under the guides until they reach the notches, when they drop into the latter and lock the desk-leaf. To unlock the leaf it is only necessary to slightly raise it, so as to withdraw the studs from the notches in the lower ends of the channels. The ends of the guides will thereupon drop, covering said notches, and allowing the leaf to be lowered without obstruction. E designates the seat, and E′ the back thereof, formed each of slats or narrow boards, connected by dowel-pins *e*, to prevent widening of seams. The seat is hinged or pivoted at its inner edge to the castings A by means of the hinge-plates F′, which are secured to the under side of the seats, and formed with shoulders *f*, to abut against similar shoulders or projections f^1, formed on the side castings, and designed to limit the movement of and support the seat when lowered. From the inner ends of the hinge-plates F′ proceed the projections f^2, which, when the seat is lowered, abut against projections or lugs f^3. The shoulders $f\,f^3$ and the lugs $f^1\,f^2$ are on opposite sides, respectively, of and below the seat pivot or hinge. By this arrangement the strain or shock produced by superincumbent weight or the falling of the seat is distributed, and the seat-pivot, &c., protected from injury. G represents recesses in the under side of the seat, designed to receive the hinge bearings or projections $g\,g'$ of the castings A F′, so as to produce a close joint. H is a concave slat, located between the seat and back, and formed with a concavity in its lower

edge, with which coincides the convex edge of the innermost slat of the seat. These edges are made to correspond in order that the seat may be moved up and down without causing the joint-seam to widen or bind, the seat for such purpose being hinged or pivoted to the side castings on a line with the center of the joint. To enable the seat to be turned a sufficient distance toward the back, the convexity of the inner slat is continued to the groove *h*, which receives the upper edge of the concave slat H when the seat is turned up. The back-slats are secured to the frame-castings A by means of bent sheet-metal plates I, provided with lugs *i* for bolts, and so formed as to fit snugly transverse grooves *i'* cut in said slats, as shown. The plates I, when used, are first screwed to the slats, and after the whole back has been formed it is attached to the castings.

The object of our improvement on the joint is to obviate the defects of the old construction, and to produce a more desirable seat than those in use.

We claim—

1. The pivoted guide E, arranged within the channel D, its lower end projecting over the notch F, in combination with the pivoted brace B^2 and hinged leaf B, substantially as shown and described.

2. In combination with the side castings A and the tilting seat E, pivoted thereto through the shoulder-plates F', the stops f^1 f^3, located on opposite sides, respectively, of the seat-pivot, and serving to distribute the strain imposed by superincumbent weight or the falling of the seat, substantially as described.

3. The combination, with the transversely-grooved slats and frame-castings, of the bent sheet-metal plates I, having plain corners, and secured to the slats and castings by means of screws or rivets, as shown and described.

In testimony that we claim the foregoing we have hereunto set our hands this 18th day of April, 1874.

JOSIAH DELPH.
WILLIAM A. BRADFORD.

Witnesses:
ALEXIS R. WARD,
CHARLES H. PEASE.