J. K. OTIS.

School Desk or Settee.

No. 213,587. Patented Mar. 25, 1879.

FIG. 1.

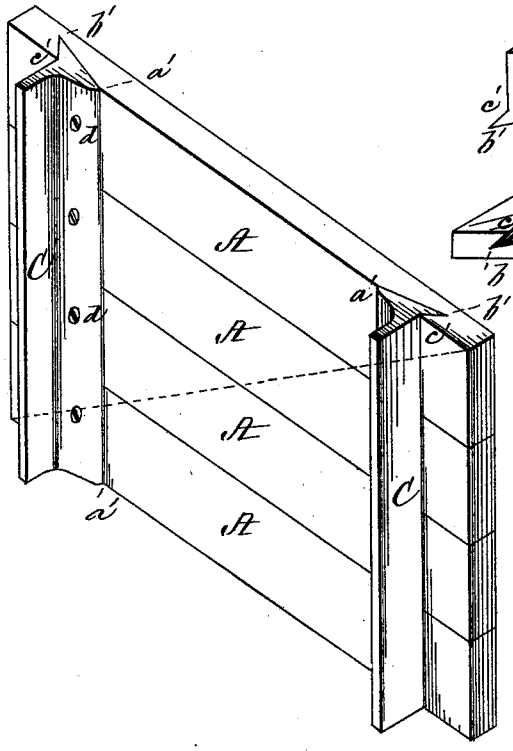


FIG. 2.

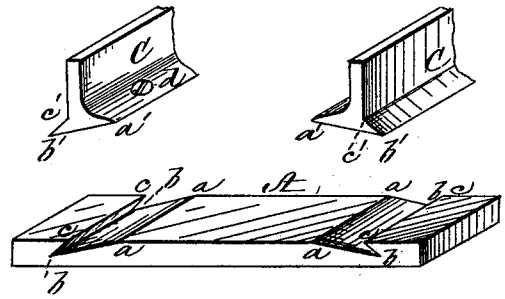


FIG. 4.

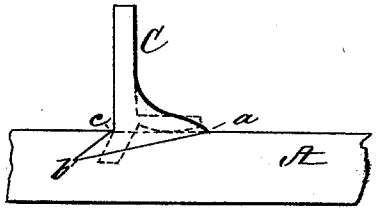
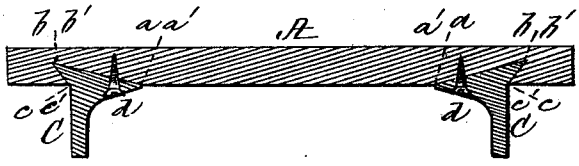


FIG. 3.



WITNESSES,
Saml R. Turner
Chas. W. A. Stearns.

INVENTOR
James K. Otis,
per
Norman W. Stearns,
ATTORNEY.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES K. OTIS, OF CAMBRIDGEPORT, MASSACHUSETTS.

IMPROVEMENT IN SCHOOL DESKS OR SETTEES.

Specification forming part of Letters Patent No. **213,587**, dated March 25, 1879; application filed August 20, 1878.

To all whom it may concern:

Be it known that I, JAMES K. OTIS, of Cambridgeport, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Iron Standards or Frames for School Desks or Settees, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of the seat of a school desk or settee with my improved iron applied thereto. Fig. 2 represents two of my improved irons and one of the slats of the seat detached. Fig. 3 is a transverse section. Fig. 4 shows the end of one of my improved irons enlarged, with dotted lines representing the form of another desk-iron now in use, upon which mine is an improvement.

The portions of the iron frame or standard to which are secured the slats composing the back and seat of a settee, or the back, seat, and bottom of a school-desk, have been made of dovetail form in cross-section, and grooves of corresponding size and shape have been made in the slats for their reception, which construction was objectionable for the reason that it was necessary to slide the slats upon the iron or the iron into the groove; and as it was difficult to make the parts exactly match, owing to the tendency of the iron to come from the mold with increased thickness at some points and of insufficient thickness at others, the slats were frequently driven into place, which marred their finished appearance, besides which when a slat needed replacing by another it became necessary oftentimes to remove all of the slats.

To avoid the difficulty of sliding or driving the slats in place and of removing several when one was to be replaced by another, an iron provided with a long narrow oblique tenon or tongue fitting into a corresponding groove in the slats has been employed, and is set forth in Patent No. 203,252, the groove being of the same width from top to bottom, and admitting of the dropping of the iron into the continuous groove formed by the series of slats when arranged side by side to form the seat, back, or bottom of the desk.

While this latter construction obviates the difficulty of the sliding or driving of the slats on the iron, it fails to overcome the difficulty experienced in fitting the iron to the groove, resulting from the iron not being cast exactly straight and of uniform thickness; and as the latter is liable to warp and have protuberances when drawn from the casting, the narrow, deep, oblique groove must be enlarged to accommodate the iron, or the latter must be filed down where it is of greater thickness than necessary, both of which operations are laborious, cause delay, and are consequently expensive. Furthermore, the oblique tenon was so deep and narrow as not to possess sufficient strength, and was liable to be frequently broken; and, again, as the portion of this iron outside of the groove was rounded, it could not bear squarely on the surface of the slat, and, being screwed thereto, acted as a lever and had a tendency to force the tongue against the side of the groove in the slat, which rendered liable either the splitting of the slat or the breaking of the iron across the top of the tongue at the point where it was weakest.

My invention consists in an iron for a frame or standard of such form that two only of its surfaces come into contact with the two corresponding surfaces of an open groove formed in the wood, the bottom of the iron being so inclined and of a width sufficient to secure for it a firm and extended bearing on the wide surface of the top of the open groove, by which construction the iron may be dropped readily into its seat, to which it accommodates itself without requiring to be filed or enlarging the groove at points where the iron may have extra accidental thickness, the width of the iron being increased at the point where the greatest strength is required, each slat being secured to the iron by a screw passing into each end, which draws the iron snugly into its seat without prying up against the side of the slat, no pressure in either direction exerted by the occupant of the desk or settee causing any looseness or play of the parts, the employment of an iron of my improved construction obviating the necessity of driving or sliding the slats on the iron incident to the dovetail form, and avoiding the splitting of the slats or breaking of the iron incident to the use of one having

the narrow, long, oblique tongue or tenon before referred to.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A A represent a series of rectangular slats, each provided with an open recess formed by a long straight side, *a b*, and a shorter one, *b c*, the intersection of the two lines making a re-entrant acute angle at *b*, the several recesses, when the slats are arranged side by side to form the seat, back, or bottom of a desk, constituting a continuous transverse groove for the reception of the butt or thick portion of the iron C of the supporting-frame, the side *a b* of the groove being of considerable width, so as to afford a firm and extended bearing for the corresponding inclined side *a' b'* of the iron.

The butt of the iron is laid into the groove, and is brought to a firm bearing therein by a screw, *d*, passing through it and into the slat near each end, the screw serving to draw the iron snugly into the angle *b* of the groove, by which means all liability of looseness and play of the parts is avoided.

By making the iron of extra thickness in the direction of the arrow it is enabled to withstand any strain which may be brought against it by the occupant of the desk, and by making the opening across the top of the groove of considerable width and of the form seen the iron can be readily dropped into its seat and secured in place without the necessity of either widening the groove or filing the iron, should it happen to come from the mold with protuberances thereon. Should, however, the iron be of the form and proportion shown dotted in Fig. 4, as described and illustrated in Patent No. 203,252, the screw or other fastening passing through the elevated or rounded end of the iron would exert a tendency to rock or pry the oblique tenon against the side of the slat, which would be liable to be split or the iron broken thereby, besides which, as the groove is deep and narrow, a difficulty would be experienced in enlarging it if the iron was warped or of irregular thickness, as is common in castings of such form when drawn from the mold.

From the foregoing it will be seen that an iron of my improved construction possesses the requisite strength to withstand any pressure to which it may be subjected, is exceedingly convenient to apply, does not require filing nor the cutting away or enlarging of the groove, and does not split or break the slat.

What I claim as my invention, and desire to secure by Letters Patent, is—

The frame or supporting-iron C, with its inclined sides *a' b'* and *b' c'*, forming an acute angle with each other, in combination with the slats A A, provided with a wide two-sided groove of a form corresponding to the two bearing-surfaces of the iron, and secured thereto by means of screws or other suitable fastening, constructed to operate substantially as and for the purpose set forth.

Witness my hand this 6th day of August, A. D. 1878.

JAMES K. OTIS. [L. S.]

In presence of—
GEO. J. CHANDLER,
HARVEY J. ROUNDY.