M. W. CHASE.
School-Furniture.

No. 198,352. Patented Dec. 18, 1877.

Fig 1.

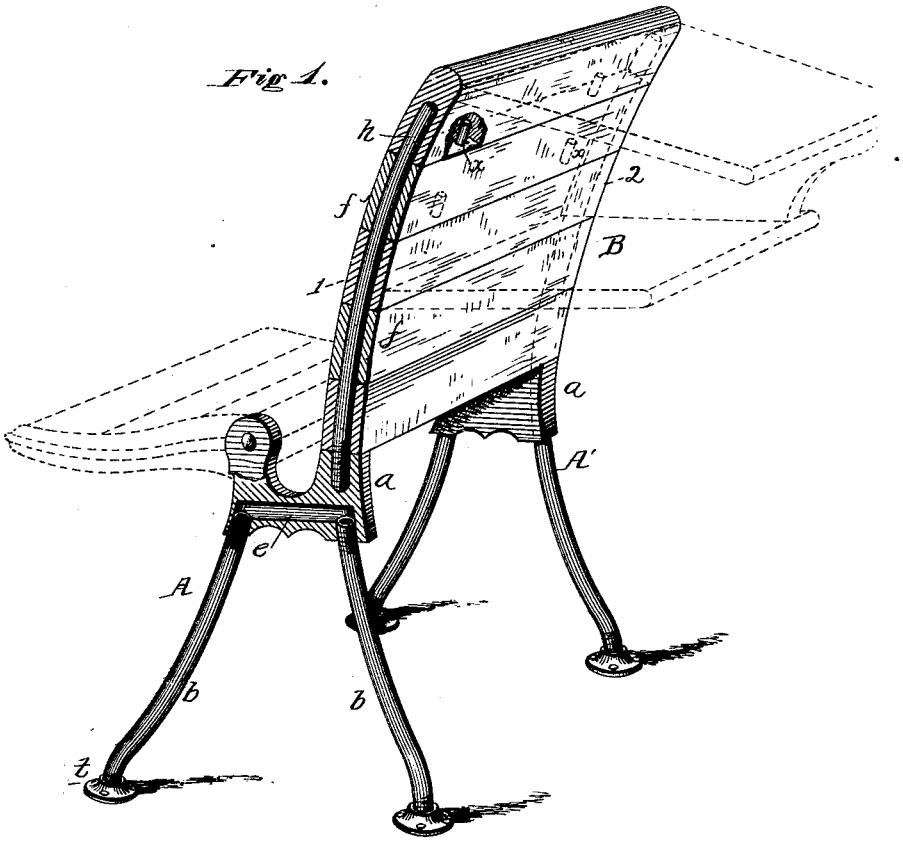


Fig 2.

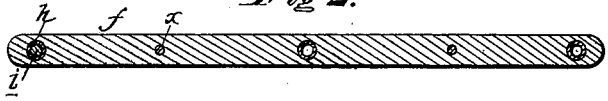
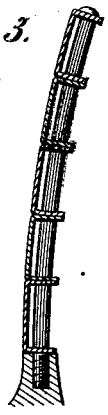


Fig 3.



Witnesses
Harry King.
George Thom.

Inventor.
M. W. Chase
By his attorney
Charles E. Foster

UNITED STATES PATENT OFFICE.

MARCELLUS W. CHASE, OF BUFFALO, NEW YORK.

IMPROVEMENT IN SCHOOL-FURNITURE.

Specification forming part of Letters Patent No. **198,352**, dated December 18, 1877; application filed June 12, 1877.

To all whom it may concern:

Be it known that I, MARCELLUS W. CHASE, of Buffalo, Erie county, and New York State, have invented new and useful Improvements in Furniture, of which the following is the specification:

The object of my invention is an improvement in school-furniture, fully described hereinafter, whereby I effectually overcome the bad results incident to the warping of the wood, the loosening of the screws, and the inequality of the floors, and at the same time reduce the cost of construction and produce stronger and more durable articles.

In the accompanying drawings, Figure 1 is a perspective view, partly in section, illustrating sufficient of a school-seat to exhibit my invention. Fig. 2 is a section on the line 1 2, Fig. 1; and Fig. 3, a modification.

A A′ are the standards, and B is the back, of a school-seat, which may be independent of the desk, or the latter may be secured to the desk, as shown in dotted lines, Fig. 1.

Although the standards A may be constructed in any suitable manner, I prefer the construction shown in Fig. 1, which represents each standard as consisting of metal legs *b*, solid or hollow, and a metal block, *a*, into or through which the legs extend.

Generally the legs *b* consist of metal tubes, and the block *a* is of cast metal, with threaded sockets adapted to receive the threaded upper ends of the legs *b*, and, if necessary, provided with a communicating passage, *e*, through which hot air, water, or steam may pass from one leg to the other when the legs of the desk constitute the heaters of the school-room.

This construction is simple, cheap, and of great strength, and is further advantageous, as either leg can be lengthened or shortened by screwing it into or out of the block *a*, so as to give the desk a firm bearing on uneven floors. If, however, a cheaper construction is required, the block *a* may be cast directly on the legs.

It has always been a matter of difficulty to strongly and securely attach the back B to the standards and to connect the parts composing the back to each other, owing, mainly, to the shrinkage of the wood and its liability to split, which result in its disconnection from the fastening.

I effectually overcome these difficulties by dispensing with all external fastenings, and forming the back or seat of parallel strips *f* and rigid cross-rods *h*, which extend transversely through openings in the strips, and form, with the latter, a strong and rigid plate, which is best connected to the standards by prolonging the rods *h*, so that they may be secured, by screwing or otherwise, to the block *a*, or by extending them completely through said blocks to form the legs *b*.

When thus constructed the shrinkage of the wood only binds the same more firmly to the rods *h*, the latter are concealed so that they cannot become rusty, while both sides of the back or seat are finely finished and free from all protuberances, and none of the parts can become loosened or detached from each other.

In order to secure a greater strength, the strips may be glued to each other, and dowel-pins *x* may be inserted at intervals, and one or more intermediate rods, *h*, may be employed, and the feet *t* are arranged to turn on the legs, so as to bring the screw-openings to any desired position. I have found it best to use metallic tubes for the rods *h*, and, when additional longitudinal strength is required, to insert solid rods *i* within the tubes.

It will be seen that a slatted back or seat may be made by interposing distance-pieces between the strips *f*, and that a single strip of wood may be substituted for the several strips specified, in which case holes are bored through a straight strip, and the latter is then bent, the bent rods retaining the wood in its shape.

It will also be seen that the same construction is applicable where the back or seat is of metal, the rods *h* in such case extending through the flanges of separate flanged bars, as shown in Fig. 3.

It will be seen that the rods *h* may extend through the side piece, as well as through the back of the desk.

I claim—

1. The back or seat B, consisting of the strip or strips *f* and the rods *h*, extending transversely through openings in the said strip or strips, as set forth.

2. A chair back or seat in which a strip or strips, *f*, of wood or other material, and transverse concealed rods *h* are arranged and combined, as set forth.

3. A desk or seat provided with a metallic

bar, the lower portion of which constitutes a part of one of the standards, while the upper portion extends transversely through and strengthens, stiffens, and supports the wooden portion, substantially as set forth.

4. The combination of the rods *b* and the metal block *a*, having sockets to receive the threaded ends of the rods, as set forth.

5. The combination of the rods *b* and the block *a*, having a channel, *e*, for the purpose specified.

6. The legs provided with feet *t*, connected to the legs, but adjustable, as set forth.

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

MARCELLUS W. CHASE.

Witnesses:
C. E. FOSTER,
HOWARD ZEVELY.