(No Model.)

2 Sheets—Sheet 1.

J. F. COULTER.

SCHOOL DESK AND SEAT.

No. 273,260. Patented Mar. 6, 1883.

Fig. 1.

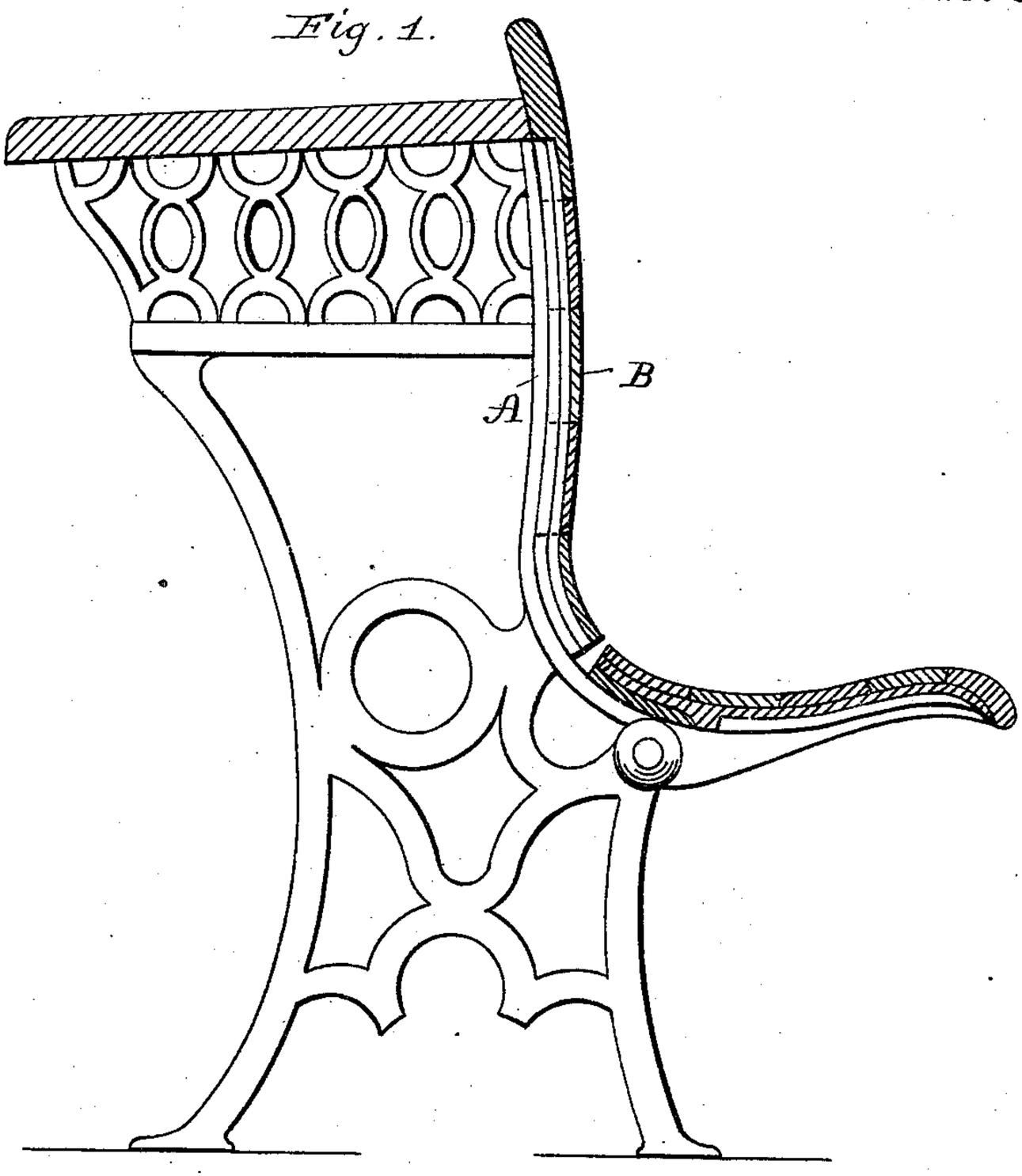
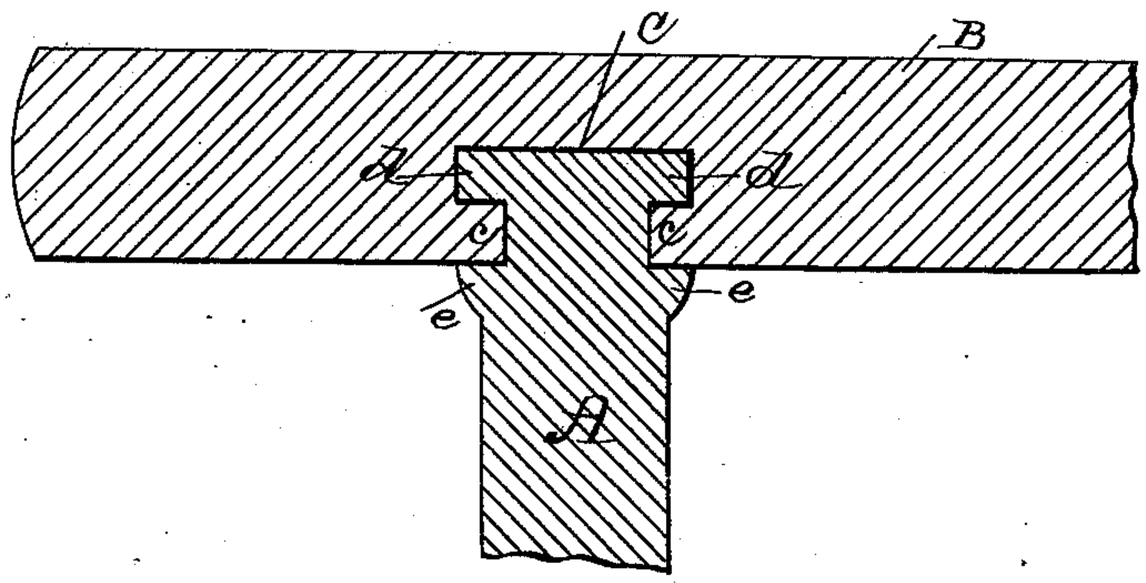


Fig. 2.



Witnesses:

W. B. Masson

L. C. Hills.

Inventor:

Joseph F. Coulter

By Pierce Fisher

His Attorneys.

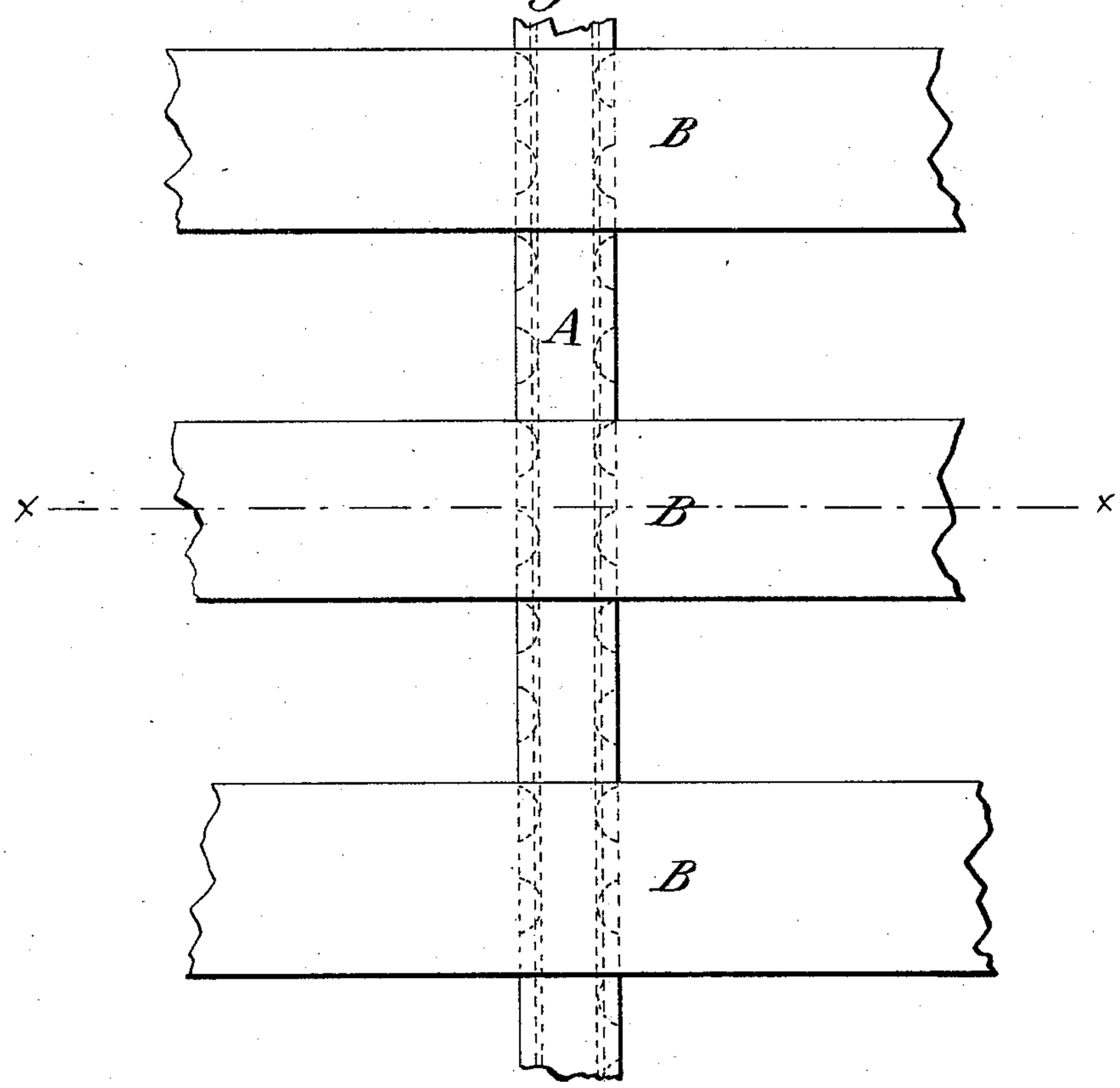
(No Model.) 2 Sheets—Sheet 2.

J. F. COULTER.

SCHOOL DESK AND SEAT.

No. 273,260. Patented Mar. 6, 1883.

Fig. 3.



Witnesses:

N. S. Hammack

J. W. Virgin

Inventor:

Joseph F. Coulter

by Brennemann & Colton

his attys.

UNITED STATES PATENT OFFICE.

JOSEPH F. COULTER, OF BURLINGTON, IOWA.

SCHOOL DESK AND SEAT.

SPECIFICATION forming part of Letters Patent No. 273,260, dated March 6, 1883.

Application filed January 25, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH F. COULTER, of Burlington, Des Moines county, Iowa, have invented certain new and useful Improvements in Combined School Desks and Seats, of which the following is hereby declared to be a full, clear, and exact description.

The invention relates to combined school desks and seats having upright standards of cast-iron, to which are secured the wooden top of the desk and the wooden slats forming the back and bottom of the seats.

Said invention consists in uniting the iron standards and wooden parts, as specified, directly together by a joint of peculiar character formed in the standards and wooden top and slats, respectively, the nature of which joint will be presently described, and distinctly defined in claim following.

In the manufacture of a combined school desk and seat that may be taken apart for shipment in small compass, and thereafter set up in a firm substantial way by persons unskilled in joinery, it is necessary that the parts shall be few in number and simple in construction; that the use of screws, bolts and nuts, dowels, keys, and like locking devices involving skill to properly set them be carefully avoided, since they add to the complexity of the structure, require nicety in fitting, and are apt to start, break, or crack the wooden parts united thereby, and particularly so if the wood be green or cross-grained and liable to warp or shrink. The desk becomes rickety and unstable after short usage, and is altogether unsuitable to the comfort of the scholar or to the quiet of the school-room.

The present invention relates to that class of desks and seats which discards all such fastening adjuncts and secures the standards to the wooden parts, without interposition of other elements, by a joint formed directly in the standards and in the wooden top or back and bottom slats, respectively. This class of joints satisfies the condition of simplicity as near as practicable; but in the forms in vogue prior to my invention certain defects were developed that it is the purpose of my improvement to correct.

Figure 1 is a sectional side view of a combined school desk and seat made in accordance with the invention. Fig. 2 is a sectional view on line *x x* of Fig. 3 to show the nature of the joint uniting the standards and slats of the desk, and Fig. 3 is a detail plan view of a standard and several slats combined together in accordance with the invention.

Along the top and front edges of the cast-iron standards A is formed a tenon, consisting of a square T-head, below and parallel to the side tongues, *d*, of which are formed on the standard the projecting ledges or ribs *e*.

Across each of the bottom or back slats of the seat and across the wooden desk-top are cut two parallel T-mortises, C, at distance apart equal to the distance between the vertical standards A in the desk as set up, said mortises C being of dimension and contour closely corresponding with the tenon on the standards, so as to snugly fit the same when driven home, the lips *c* of the mortise being tightly embraced by the tongues *d* and ribs *e* of the tenon.

The joints hitherto in use in the relation described have been either a dovetail or wedge-like tenon on the standard fitting into a corresponding mortise of the desk-slats, or else a simple T-shaped tenon and mortise, without the supplemental ribs *e*, as in my device. In the former, if the mortise be tight, the wedge-like tenon will tend to, and often does, split the slat when being forced into position. If the mortise be loose, or become so by shrinkage, it will make an insecure joint, develop new strains upon the slender slat, and, if not broken, will at least make the desk to rattle. The mortise requires nicest accuracy in fitting it straight, and if the slats be of unseasoned lumber or have cross fibers, it is clear that the mortise will be very apt to become distorted and irregular, so that the slat will split in driving it home. The simple T-shaped joint avoids in a measure the risk of splitting consequent upon the use of the wedge-like tenon; but in such T form the slat has been weakened in cutting the deep seat or mortise, and the lips of the mortise are wholly unsupported.

When weight or strain is put upon the weak unsustained slats they are liable to snap and break. If the joint be loose, the slats

rattle; if tight, there is danger of splitting off the lips of the mortise joint in driving up the slat.

In my form of joint there are nine bearing-surfaces between the tenon and mortise. In the dovetail there are only five, and in the simple T but seven. The angles of contact are likewise increased in my form over the others. If my joint be loose at the outset, or become so by shrinkage of the wood, this is never so great as to bring the lips *c* of the mortise away from the tongues *d* and ribs *e*, so that the weakened portions of the slats—that is, the fibers about lips *c*—are never unsupported, nor can the desk become rickety, as the additional contact faces and angles are shown in practice to hold the parts most firmly and rigidly together. The slats may be set by the most inexperienced, and can be driven home solidly and compactly without risk of splitting off at any part.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

A combined school desk and seat having the usual upright standards, A, the edges whereof are provided with a tenon consisting of a square T-head and projecting ribs *e*, in combination with the desk-top, back of seat in which are T-mortises to correspond with and to fit said tenon, substantially as described.

JOSEPH F. COULTER.

Witnesses:

JONATHAN THUM,

N. S. HAMMACK.

Correction in Letters Patent No. 273,260.

It is hereby certified that in Letters Patent No. 273,260, granted March 6, 1883, upon the application of Joseph F. Coulter, of Burlington, Iowa, for an improvement in "School Desks and Seats," an error appears in the printed specification requiring correction, as follows: In line 28, page 2, the word "of" should read *or;* and that the Letters Patent should be read with this correction therein to make it conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 2d day of June, A. D. 1885.

[SEAL.]

H. L. MULDROW,
Acting Secretary of the Interior.

Countersigned:

ROBT. B. VANCE,
Acting Commissioner of Patents.