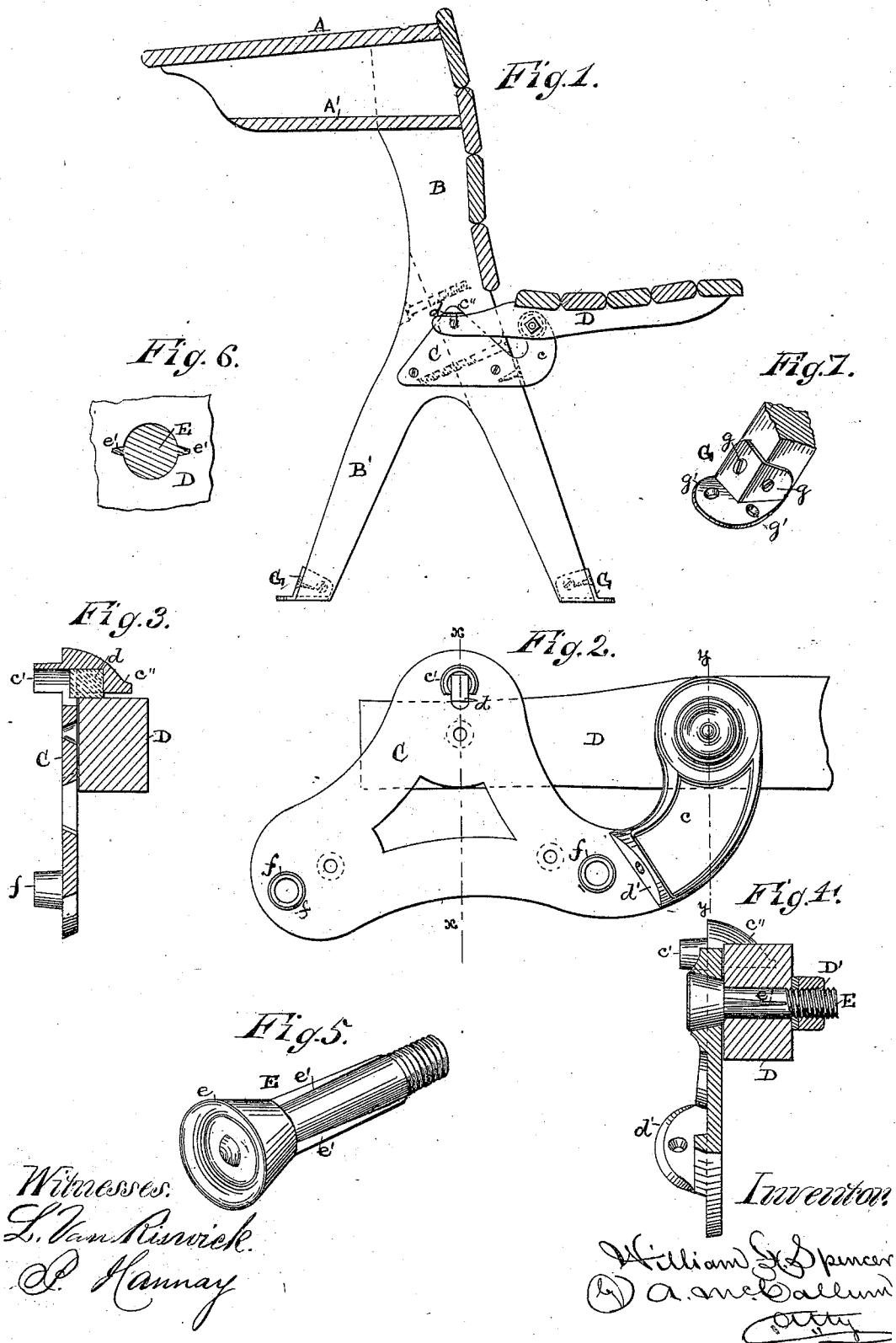


W. F. SPENCER.
SCHOOL-FURNITURE.

No. 176,701.

Patented April 25, 1876.



UNITED STATES PATENT OFFICE.

WILLIAM F. SPENCER, OF RICHMOND, INDIANA.

IMPROVEMENT IN SCHOOL-FURNITURE.

Specification forming part of Letters Patent No. **176,701**, dated April 25, 1876; application filed February 1, 1876.

To all whom it may concern:

Be it known that I, WILLIAM F. SPENCER, of Richmond, in the county of Wayne and State of Indiana, have invented certain new and useful Improvements in School-Furniture; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to school-furniture, more particularly to a new combined school desk and seat, the principal parts of which are made of wood.

The invention consists in a hinge, the principal novel feature of which consists in a pivotal bolt having wedge-shaped wings or ribs, operating as hereinafter set forth. The invention also consists in a new and improved metallic seat-arm bracket, which also serves to firmly secure the two parts of the wooden standard, and is provided with stops to limit the motion of hinged seat. The invention further consists in the peculiar construction and arrangement of the wooden standards and desk, and the method adopted for uniting all together; and, lastly, the invention consists in a new and improved device for fastening the feet or lower ends of the standards to the floor, all as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a vertical sectional view of my improved wooden school seat and desk. Fig. 2 is an enlarged view of the seat-arm bracket. Fig. 3 is a vertical sectional view of the same on the line *xx*, Fig. 2. Fig. 4 is a vertical section of the same, taken in the line *yy*, Fig. 2. Fig. 5 is a perspective view of my new pivotal bolt enlarged. Fig. 6 is a cross-section of the pivotal bolt. Fig. 7 is a view of one of the shoes or flanges for fastening the standards to the floor.

Referring to the parts by letters, A represents the desk, and B B' the standard. The standard is made of two pieces of straight-grained timber, the part B extending the full length of the standard, and forming one of the supports for the desk and book-shelf.

The other portion, B', is shorter and joined to the part B about its central part, as shown by dotted line, Fig. 1. The joint may be effected by dowel-pins or mortises, and by long wood-screws, as shown by dotted lines, or it may be a long glue-joint, or by a glue-joint combined with the screws, mortise, or dowel-pins, or in any way which may be found most convenient and desirable. C is the seat-arm bracket, formed of a metal plate of triangular form, and with an upwardly curved and projecting bracket, *c*, to which the seat-arm is hinged. The bracket C is firmly secured to the two parts of the standards B B' by bolts, and serves to unite the parts of the standard more securely. *c'* is a semicircular or arc-shaped opening or boss formed through the projecting part *c''* of the upper angle of the plate C, in which a block of rubber, *d*, may be inserted, to act as a noiseless stop, which limits the motion of the seat-arm through the inner end of the latter coming in contact with it. This arrangement I prefer, and is clearly shown in Fig. 3 of the drawings; but the upper angle of the plate C may have only the projecting stop *c''*, and the rubber block be inserted in the upper edge of the inner end of the seat-arm, as shown in Fig. 1, with good effect, and the rubber block may be dispensed with entirely when wooden seat-arms are used, as the wood, striking against the metal, makes comparatively little noise. *d'* is another projection at the forward angle of the plate C. The upper end of the bracket C, which forms the bearing for the hinge, is made in the form of a rose with thicker metal, as clearly shown in Fig. 4 of the drawings. *f f* are bosses, through which the uniting screws or bolts are passed, and which relieve the screws, and serve to brace the connection between the front and rear leg. D is the seat-arm, made preferably of wood; but it may be made of metal, if desired, in which case it would not require to be so thick or massive. The inner end of the seat-arm projects inwardly slightly beyond the stop *d*, and when the seat is lowered it comes in contact with the stop and braces the seat, the strain being divided between the stop and the pivot-bolt. E is the pivot-bolt, formed with a conical head, *e*, and having wedge-shaped wings or ribs *e' e'* on

the straight part of the bolt. The end of the bolt is cut with a screw-thread to receive a nut, D'. This bolt is driven through the wood, the wings or ribs *e'* pressing into the wood and holding the bolt secure, so that it will not turn, the nut D' preventing it moving lengthwise, and serving to tighten it up when necessary.

With a bolt of this construction it will be seen that the conical head and the correspondingly conically-shaped bolt-hole in the seat-arm bracket constitute the pivot upon which the seat turns, forming a smooth pivot having considerable bearing-surface. G represents one of the plates for securing the standard to the floor. One portion is made angular, or with a lug on one side, so as to fit two sides of the standard-leg, to which it is secured by two screws, *g*, which cross each other, thereby preventing splitting of the leg. The lower portion of the plate G is made flat, and extends outward on two sides of the leg, so as to give an extended bearing-surface on the floor, to which it is secured by screws, which are passed through the holes *g' g'*.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. The pivot-bolt E, having the ribs or wings *e'*, substantially as and for the purpose specified.

2. The combination of the pivot-bolt E, having ribs or wings *e'*, with the bracket C, seat-arm D, and nut D', substantially as and for the purpose specified.

3. The triangular bracket C, having stop *d*, and arranged to operate in combination with the wooden standard B B' and seat-arm D, substantially as and for the purpose specified.

4. The plates G, constructed as described, and for the purpose specified.

5. The bracket C, having bosses *ff*, operating in combination with the wooden standards or legs B B, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM F. SPENCER.

Witnesses:

ELI STUBBS,

W. C. SHOEMAKER.