(No Model.) 3 Sheets—Sheet 1.

I. OSGOOD.

SCHOOL DESK AND SEAT.

No. 338,645. Patented Mar. 23, 1886.

FIG. 1.

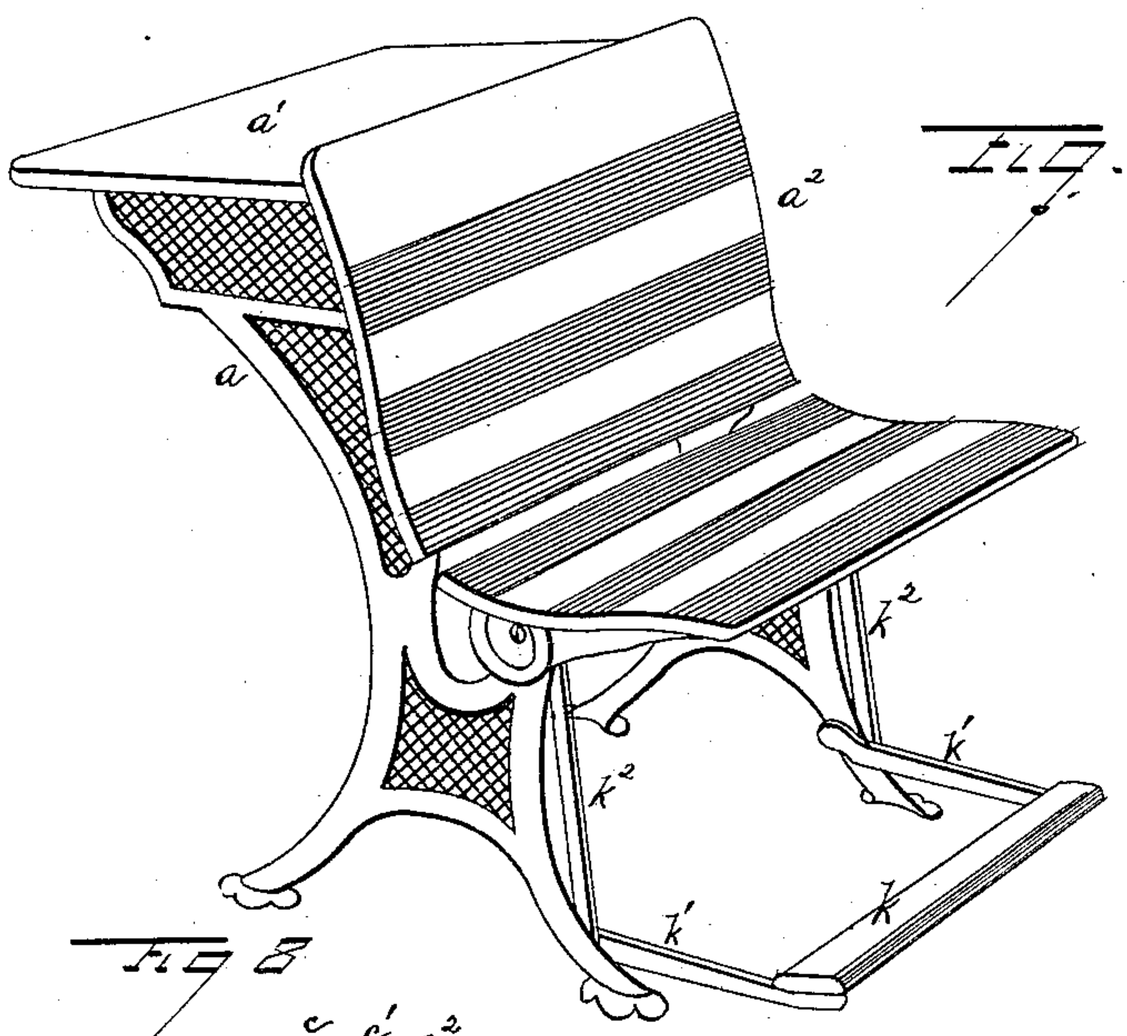


FIG. 2.

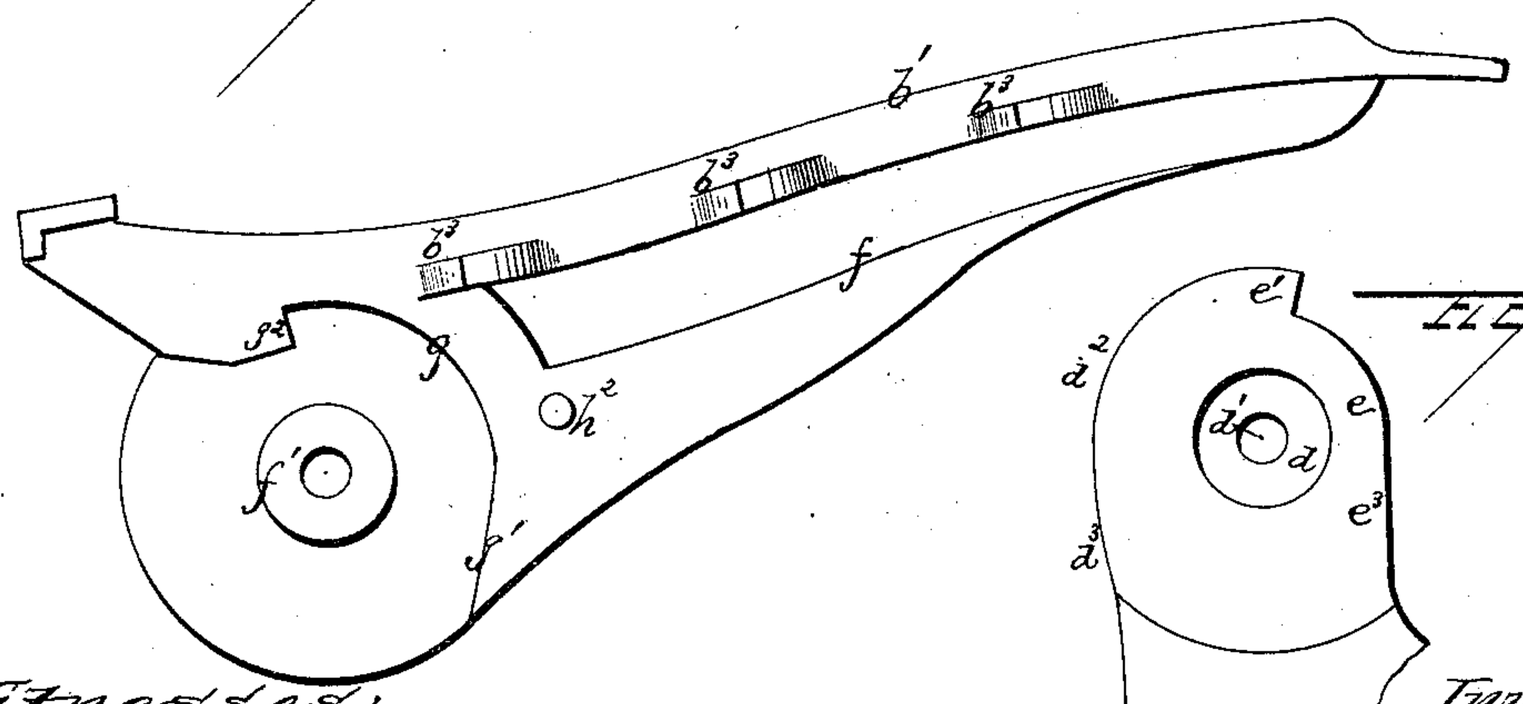
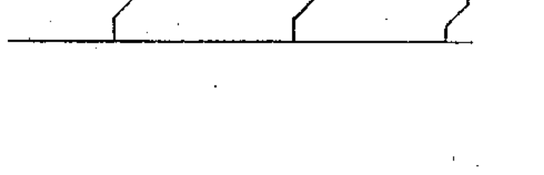


FIG. 3.

FIG. 4.

FIG. 5.



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(No Model.) 3 Sheets—Sheet 2.

I. OSGOOD.

SCHOOL DESK AND SEAT.

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FIG. 4.

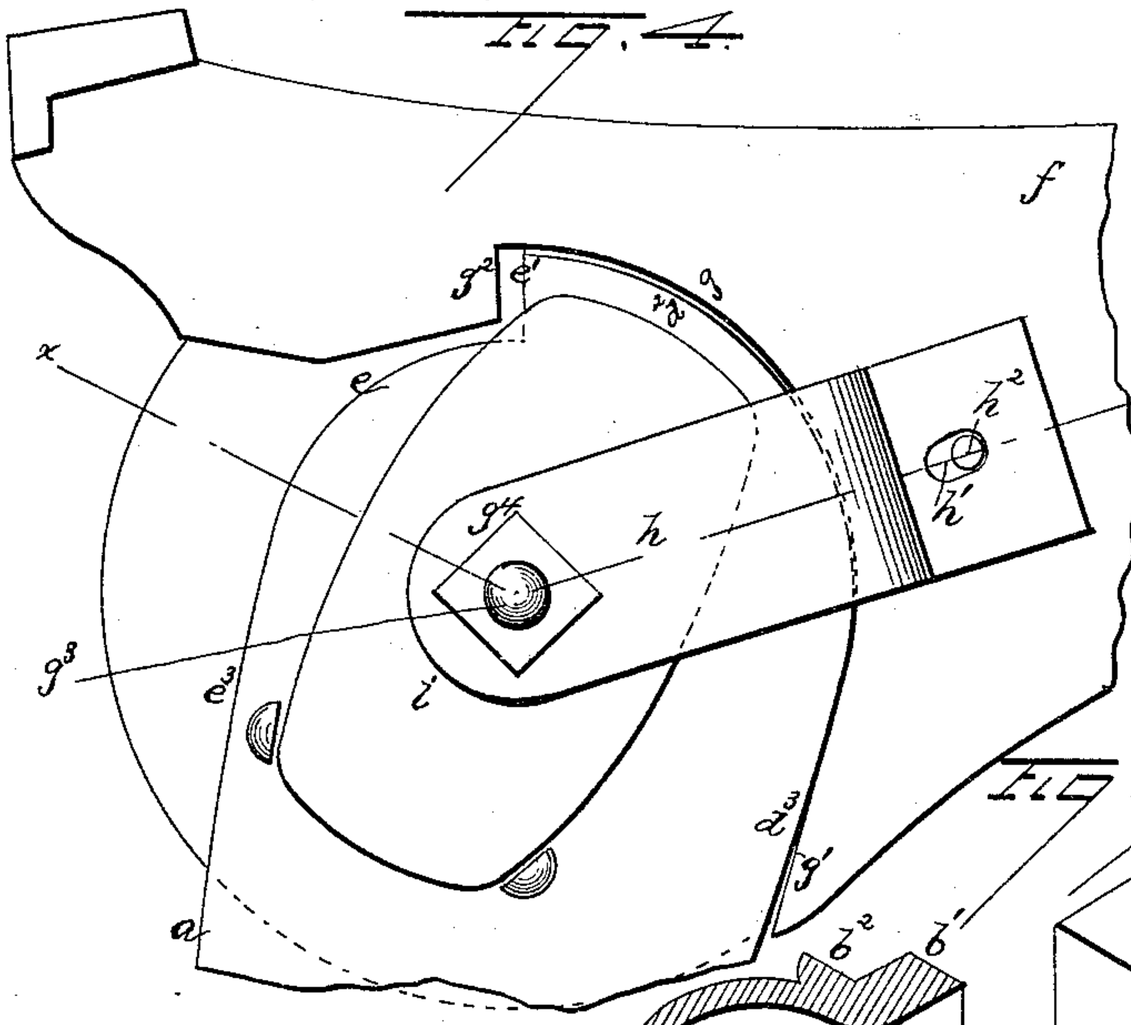


FIG. 6.

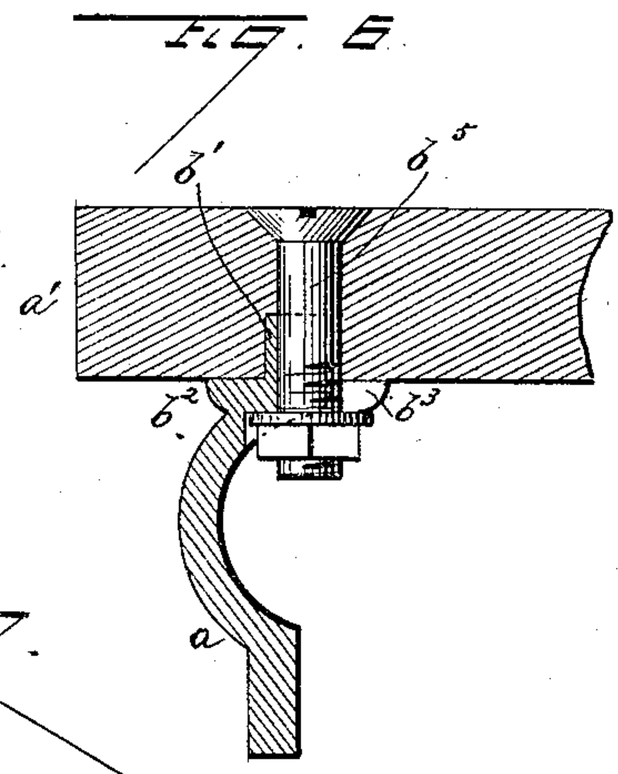


FIG. 7.

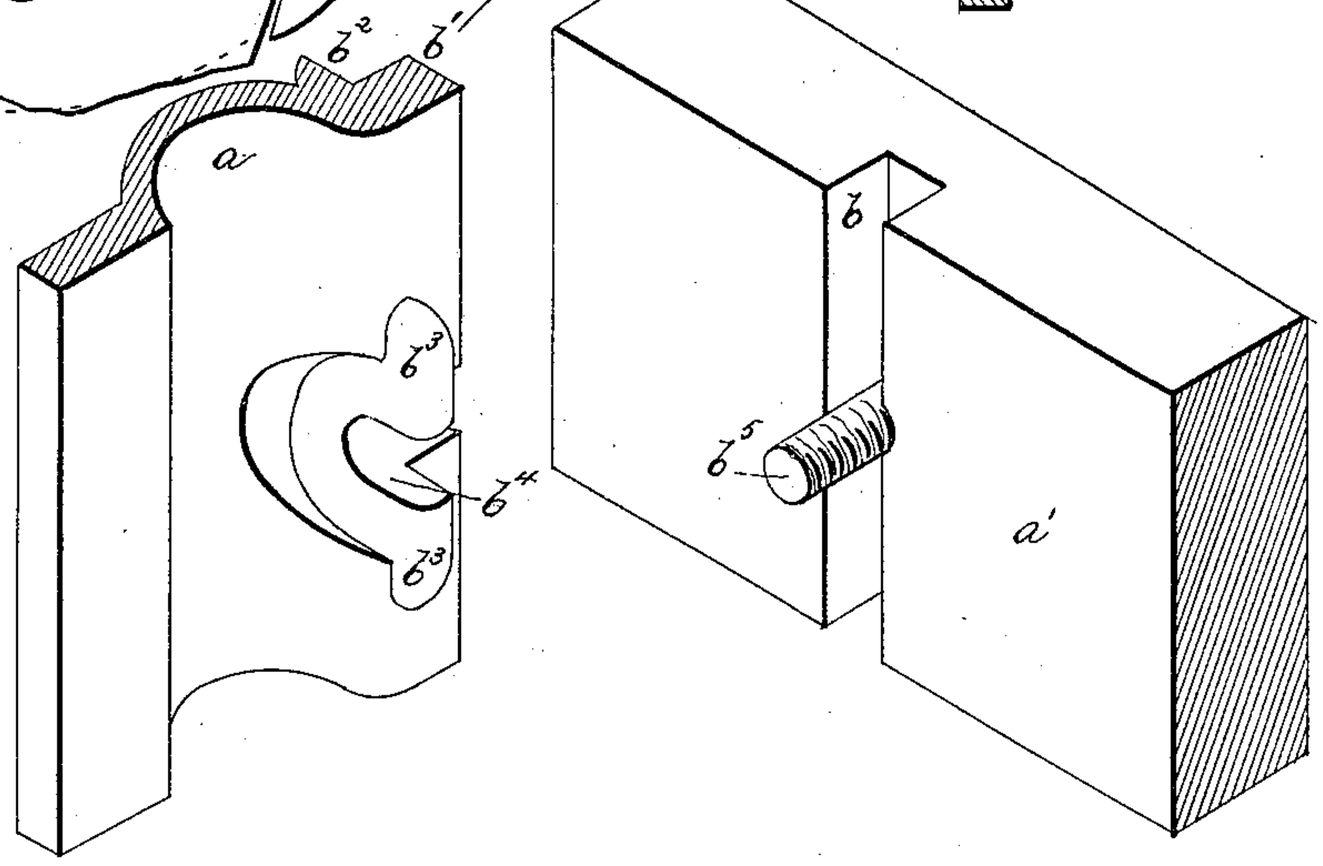
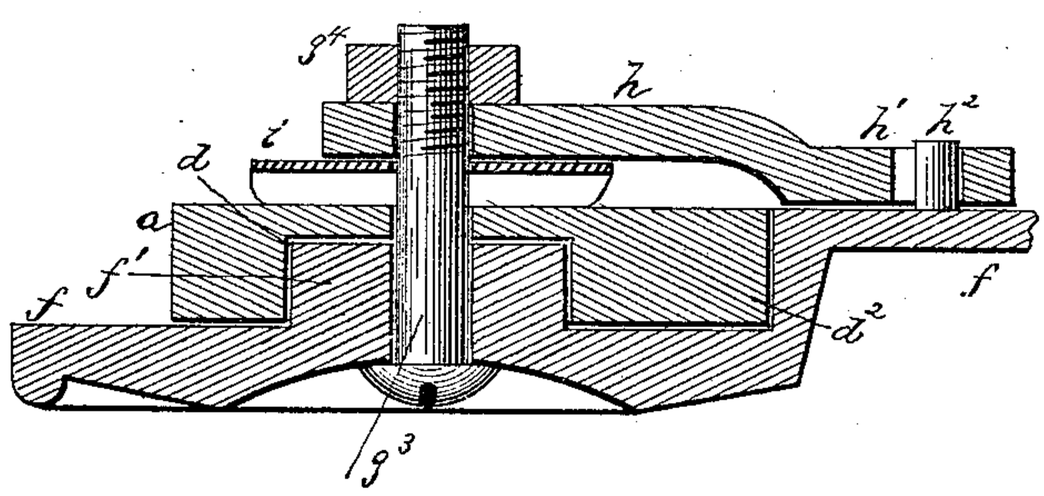


FIG. 5.



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(No Model.) 3 Sheets—Sheet 3.

I. OSGOOD.

SCHOOL DESK AND SEAT.

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FIG. 10.

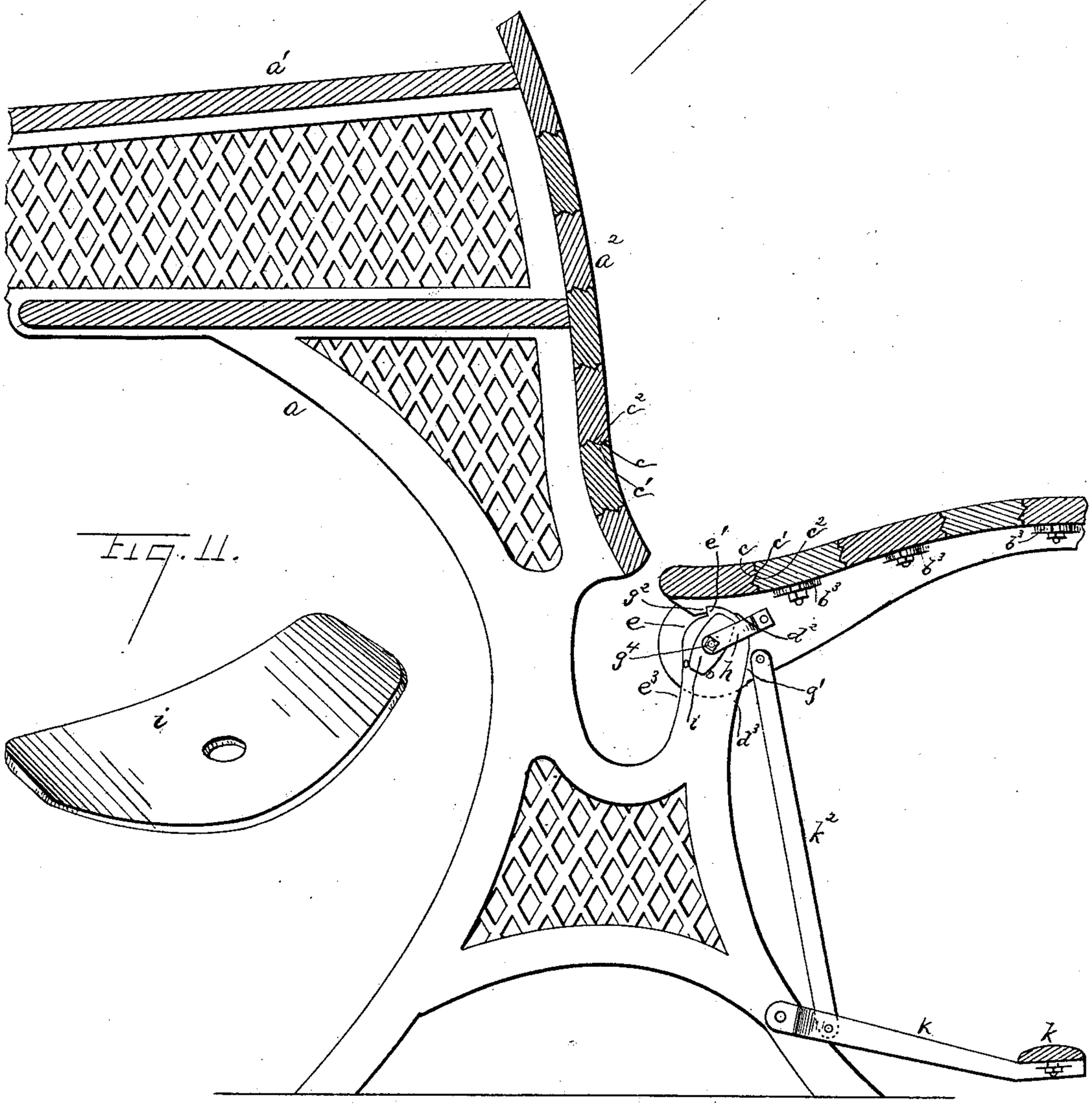

FIG. 11.

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UNITED STATES PATENT OFFICE.

ISAAC OSGOOD, OF CHICAGO, ILLINOIS.

SCHOOL DESK AND SEAT.

SPECIFICATION forming part of Letters Patent No. 338,645, dated March 23, 1886.

Application filed July 30, 1885. Serial No. 173,020. (No model.)

To all whom it may concern:

Be it known that I, ISAAC OSGOOD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in School Desks and Seats, of which the following is a specification, to wit:

This invention relates to an improvement in school-desks; and it consists in certain novel details of the construction and arrangement of the same, substantially as will be hereinafter more fully set forth and claimed.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the accompanying drawings, in which—

Figure 1 is a perspective view of my desk. Fig. 2 is a view of the seat-arm and its hinge-joint. Fig. 3 is a view of the corresponding part of the standard. Fig. 4 is a view of the joint put together. Fig. 5 is a cross-section of the joint on the line *x x*, Fig. 4. Fig. 6 is a sectional view of the main frame and the manner of securing it to the wood. Fig. 7 is a perspective view of the same. Fig. 8 is a view of the mode of jointing the wooden parts of the desk and seat, and Fig. 9 is a view of several slight modifications of the same. Fig. 10 is a sectional view of the seat and foot-rest, and Fig. 11 is a detail view of the elliptical spring.

a represents the main frame of my school-desk, which is given any desired configuration and ornamentation, and is covered by the desk-top a' and front a^2, which also forms the back of the attached seat, as usual in this class of desks. The desk-top is preferably, though not of necessity, formed in one piece, and the front in several narrow strips, which are shown clearly in Fig. 1, and both the top and front pieces are formed with a transverse groove, *b*, in which is received a continuous tongue, b', formed on the main frame, as in Figs. 6 and 7. The main frame is also formed on one side of this tongue with a ledge or shoulder, b^2, to form a solid bearing for the top and front pieces, and on the other side, at suitable intervals, with projections b^3, each of which is formed with an open slot, b^4, to receive the securing-bolt. It will be observed that this slot is deep enough to extend into but does not entirely sever the tongue, and the bolt b^5 is socketed into the wood partially on one side of the groove, as in the drawings, and I am thus enabled to secure the parts very firmly together without materially weakening either the wood or the metal, as the groove does not extend far into the former and the tongue of the latter is not entirely cut through by the bolt, and the slot to receive the latter being formed with an open side, no care is required in casting the frame, and the parts are more readily and easily put together.

The head of the bolt is in the drawings represented as socketed into the outer side of the wood, but it may as readily be socketed from the lower side in an undercut groove in the manner common in such articles, and not necessary to show herein.

The wood sections at their adjoining edges are each formed with a projecting tongue, *c*, and a corresponding groove, c', of angular form, and the tongue and depression are connected by a straight incline, c^2. In putting them together these configurations exactly fit the corresponding ones on the opposite piece and form a firm and strong joint, as in Figs. 8 and 9, which are united by glue, as usual. In Fig. 9 are shown various modified forms of this joint, in which the sharp corners or angles are cut off to facilitate their perfect formation; but in all cases the projection and depression are of angular form in cross-section, and are joined by a straight inclined portion, as described.

The lower forward side of the main frame is formed with the seat-standards, which are in their inner faces formed with a socket, *d*, of circular form, through which is a hole, d', for the hinge-bolt. This standard is on its top formed upon the outer or forward edge with a curve, d^2, concentric with the socket and bolt-hole, and which blends on the forward side of the standard into a straight or approximately straight section, d^3, which forms the stop or bearing for the seat-arm, as will be presently understood. The rear side of the standard is also formed with a curved section, *e*, of smaller radius than the first, and connected to the other by a shoulder, e', and which also ends preferably in an approximately-straight section, e^3, as clearly shown in Figs. 3 and 4.

The seat-arm *f* is of the usual general configuration, and is formed with the tongue and slotted bolt projections for attachment of the seat-slats in exactly the same manner described for the main frame, and the seat-boards are formed on their meeting edges in the same manner before described. The inner side of the hinge end of each seat-arm is formed with a circular hub, *f'*, to engage the corresponding socket in the standard, and has also a central hole for the bolt or hinge-pivot. Around the hub the main body of the arm is depressed, leaving a circular projection or flange, *g*, concentric with the hub, which merges into an approximately-straight portion, *g'*, as in Figs. 2 and 4. At the upper end of the circular flange is formed a shoulder, g^2, to engage the corresponding one on the standard. A bolt, g^3, is passed through the standard and arm, and on its inner end is a concavo-convex spring, *i*. (Shown in Figs. 4 and 5.) A guard or guide arm or brace, *h*, is also passed over the end of the bolt, and in its other end is formed with a short slot, *h'*, which is engaged with a stud, h^2, on the seat-arm. The whole is confined together by a nut, g^4, on the bolt. When this joint is put together, the hub on the arm sockets into the standard, and the bolt and spring being placed in position and the nut screwed down the elliptical spring is compressed upon the standard, which at once draws the faces of the standard and the seat-arm together with force enough to produce a friction and prevent a too quick fall of the seat.

When the seat is thrown up, the inner end of the shoulder g^2 on the seat-arm abuts against the straight bearing e^3 on the standard and prevents the actual and noisy contact of the seat and desk. When the seat is thrown down again, the curved portions d^2 *g* of the standard and seat-arm move readily past each other till the straight portions d^3 *g'* come in contact. It will be seen by reference to Fig. 4 that these straight bearings are not quite on the same tangent, and they therefore do not come together with a bang, producing a noise likely to disturb the school, but their upper edges meet first and gradually, and as they slide past each other a friction is produced that stops the fall of the seat before the shoulders or stops e' g^2 are actually in contact, and therefore no shock or noise is produced, and the seat settles down to its solid bearings as soon as weight is placed upon it.

When the parts are firmly bound together by the bolt, I will sometimes omit the socket and hub, but prefer to use it as removing the strain from the bolt, which in that case is only needed to enable the spring to draw the parts together, as the seat-arms are so well and firmly held in position by their seat-slats that the socketed hubs could not become displaced if the bolts were removed.

It will be understood that the essence of my device for preventing too much noise in the fall of the seat consists in forming the surfaces that come in contact on slightly-varying tangents to the pivotal point, and by this means preventing the full faces of such surfaces from sudden contact. To do this it will make no difference in practice whether such surfaces are straight or curved, so that they are formed, as shown, on different tangents, and as when curved this curve will generally be small I have referred to it as "straight or approximately straight."

In all school-seats trouble has been experienced, more especially with small children, in the straining and injury of the muscles and cords of the leg just above the knee by resting always upon the seat, the cause being that the seats are often too high to admit of a firm rest of the foot on the floor, and a consequent lifting of the knee and easing of the strain over the seat-edge. To obviate this I provide a transverse bar or foot-rest, *k*, of any suitable size, which is secured at each end to a supporting-arm, *k'*, hinged on the main frame, as fully seen in Fig. 10. This rest is supported in the proper position to receive the foot and sustain the limb without undue pressure on the seat-edge, and when not in use is readily folded up in a manner similar to the seat. To facilitate this I connect one or both of the arms *k'* with the hinged seat-arms by means of a link, k^2, and the act of lifting or lowering the seat operates the foot-rest at the same time. If desired, the connection of the link and arms *k'* may be made adjustable by a series of holes or similar means, so that the foot-rest may be held at various heights, as required by the occupant of the seat.

I am aware that the wood sections of desks have heretofore been fitted together at their adjoining edges by forming the edge of one section with rounded grooves and narrow outer inclines, and forming the adjoining section with rounded tongues and inclines fitting close into the corresponding configurations of the opposite section. It will be observed, however, that such a construction as this does not afford the strong and immovable joint of mine, for the reason that the opposing surfaces, being rounded, are smooth and more liable to roll when strained laterally than where the opposing surfaces are broken up into acutely-angular points fitting tight into acutely-angular depressions, as is the case in my construction.

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

1. In a school seat or desk, a covering slat or board having its edge formed with an angular projecting tongue, *c*, and a corresponding-shaped depression, *c'*, placed side by side and joined by a straight incline, c^2, said tongue and depression connecting also with the faces of the slat by rectilinear surfaces, substantially as shown and specified.

2. In a school desk or seat, a main supporting-frame having a continuous tongue upon one edge, and a lug or lugs at the base of said tongue formed with an open slot extending

into the web of the tongue, in combination with a covering-board formed with a groove, and provided with a securing-bolt passing through one side of said groove, substantially as and for the purpose set forth.

3. In a school-seat joint, the combination, with the seat-arm and standard, of a pivot-bolt passed through them, a spring thereon engaged with the standard, a brace or arm thereon engaged with the seat-arm, and a nut abutting upon said arm, whereby the nut is held in contact with a surface moving with the seat and bolt, and thereby prevented from loosening, substantially as and for the purpose set forth.

4. In a school-seat, the combination, with a standard having its upper end formed of two concentric curves of different radiuses connected by a shoulder, and the larger curve ending in a tangent approximately straight, in combination with a seat-arm formed with a curved flange concentric with the pivotal point and having a shoulder at one end and an approximately-straight tangential extension at the other, substantially as and for the purpose set forth.

5. The combination, in a hinge-joint for school-seats, of the standard formed with the curve d^2, ending in a tangent-extension, d^3, and the curve e on the opposite side concentric with the first and connected with it by the shoulder e', with the seat-arm f, formed with the curved flange g, tangent-bearing g' at one end of the same and shoulder g^2 at the other, the pivotal bolt g^3, brace h, elliptic spring i, and nut g^4, all constructed and arranged to operate substantially as and for the purpose set forth.

6. The combination, with the hinged seat f, of the folding foot-rest consisting of the rods k' k', pivoted to the frame, the connecting-links k^2 k^2, pivoted to the rods k' and also to the seat, and the cross-piece k, substantially as shown, and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ISAAC OSGOOD.

Witnesses:
W. C. McARTHUR,
ED. TRABUE.