(No Model.)

A. WINKLER.

SCHOOL SEAT.

No. 369,829. Patented Sept. 13, 1887.

Fig. 1.

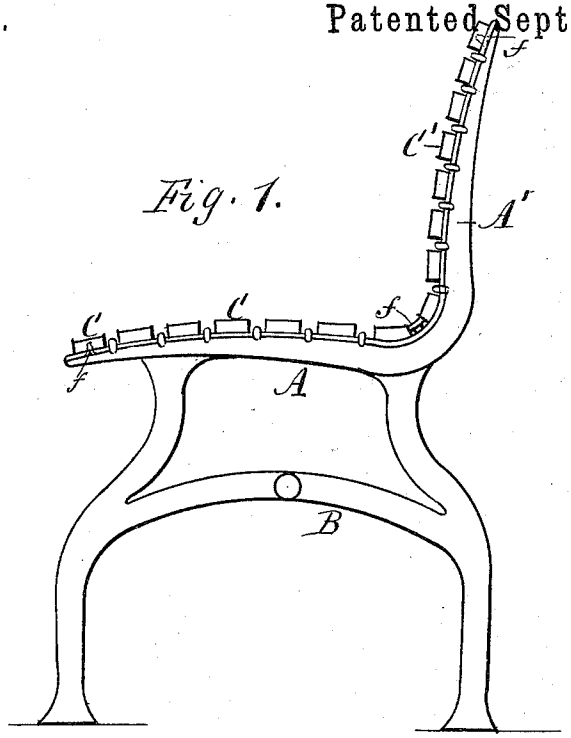


Fig. 2.

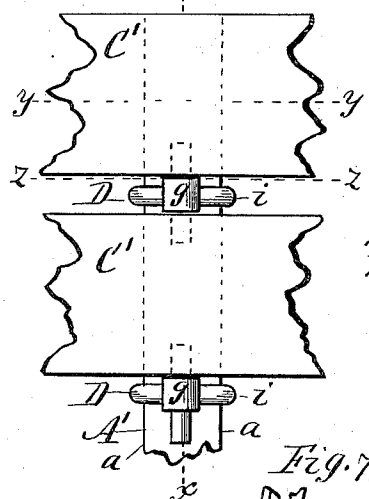


Fig. 3.

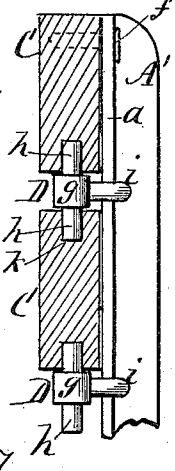


Fig. 4.

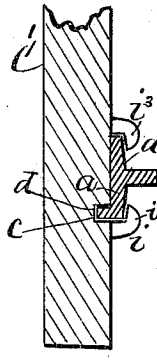


Fig. 5.

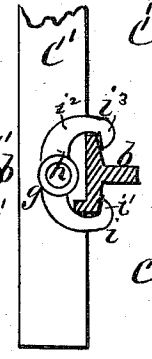


Fig. 6.

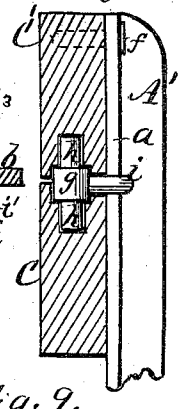


Fig. 7.

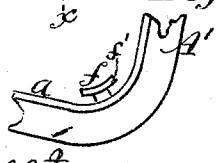


Fig. 8.

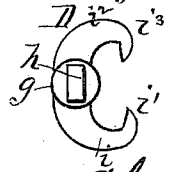
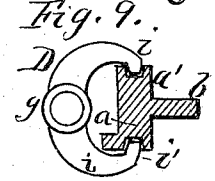


Fig. 9.



Attest.

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UNITED STATES PATENT OFFICE.

ALOIS WINKLER, OF ONEONTA, ASSIGNOR OF ONE-HALF TO W. H. BENNETT, OF ROCHESTER, NEW YORK.

SCHOOL-SEAT.

SPECIFICATION forming part of Letters Patent No. 369,829, dated September 13, 1887.

Application filed October 3, 1881. Serial No. 43,054. (No model.)

To all whom it may concern:

Be it known that I, ALOIS WINKLER, of Oneonta, Otsego county, New York, have invented a certain new and useful Improvement in School, Lawn, and other Seats and Settees; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is an end elevation of a seat embodying my improvements. Fig. 2 is a front elevation, on an enlarged scale, of a portion of two of the slats and their supporting and connecting devices. Fig. 3 is a cross-section on the line *x x*, Fig. 2. Fig. 4 is a horizontal section on the line *y y*. Fig. 5 is a horizontal section on the line *z z*. Fig. 6 is a view similar to Fig. 3, except as the devices are shown as being so constructed and related as to bring the slats close together. Fig. 7 shows a portion of the curved or angular part of the seat-frame. Figs. 8 and 9 illustrate modifications.

In the drawings, B represents a base, which may be of any suitable character, for holding the parts which directly support the slats. The latter parts consist of arms or bars A A′, preferably cast integrally together, one serving as a support for the back slats and the other for the bottom slats. The supporting-bar is formed with a flange, *a*, against one side or face of which the rear sides of the back slats, C′, rest, and with the edge thereof engaging loosely the devices which fasten the slats in place.

Heretofore it has been customary in making seats of this general character to secure the slats by means of holders put into place either by passing them through apertures in the metallic support or through slots in the edges thereof, or screwed to said supports, or riveted or fastened in some similar manner.

I avoid the necessity of drilling holes or of using screws or rivets by employing connecting or clamping means for the slats which engage loosely with the metallic slat-supports, they being so joined to said supports that they can be moved relatively thereto in lines transverse to the seat (that is to say, from the front to the back of the seat proper, or vice versa) while being in engagement with the seat-support, but which cannot be moved on such lines as to permit them (the connecting or clamping devices) to escape from the metallic seat-supports. Thus the bottom slats are held in such manner as not to be movable on vertical lines away from the supports, though the clamping devices by which they are held can be moved in horizontal lines when the slats are to be removed or are to be fastened in place. So, too, the back slats are held in such way as not to be movable on horizontal lines, although the clamping devices which hold them can be moved on lines more or less nearly vertical.

With the frame-pieces I combine abutments or stops of any suitable number, against which the slats can bear transversely. Such abutments or stops are shown at *f f*, and may be permanently formed with or attached to the frame, or detachably connected with the frame by screw-threads or otherwise. In the construction shown I have employed abutments or stops at three points at each end of the seat, one, *f*, being at the junction of the back with the seat, another, *f*, at the top of the back, and another, *f*, at the forward end of the seat. The two latter, as shown, are screws which pass through apertures in the metallic slat-support and engage with the outer slats.

When the parts are in place, it will be seen that there are two series of slats supported at each end upon the curved or angular frames, one series being upon each side of the central abutment, the two series being, respectively, between said abutment or stop and the outer ones.

The clamping devices which I employ have means for engaging with the slats, and in combination therewith means for loosely engaging with the slat-support, the last said engaging means being adapted to move more or less, as above described.

Thus *h h* represent pins or bars which can engage with the edges of the slats, and which carry an arm, *i*, which extends backward and is provided with means (a hook, *i′*, as shown) for engaging with the slat-support. The arm *i* and hook *i′* pass around the edge of the slat-support or flange *a* thereon and engage with a face or side other than that upon which the

slats rest, so as to be held in place. I prefer to have upon the opposite side of the bars *h h* another arm, i^2, and hook i^3, substantially similar to those at *i i'*, and also adapted to engage with the slat-support or a part thereof, each of said arms and hooks acting to hold the other in place and to bind the slat to the frame, although the turning of either hook out of engagement with the slat-support of the seat will be prevented if the ends of the slats at the other end of the seat are fastened properly to the frame.

The method which I prefer for engaging the fastening devices or clamps with the edges of the slats is shown—that is to say, the edges of the slats are provided with sockets, into which the bars *h h* fit. The spirit of the invention can, however, be preserved even though the clamps and slats be joined in other ways.

If the parts *h h* are square or angular in section, as shown in Fig. 8, they will tend to prevent the unlocking of the arms and hook *i i'* and assist in preserving a firm engagement.

Under some circumstances it is desirable to have the slats held somewhat apart. To do this I provide the fastening devices D with a hub, *g*, which can be formed integrally with the bars *h h*.

The intermediate abutment or abutments above described can be provided with pins *f'* or other suitable means for engaging with the slats. It will also be seen that the devices with which the clamp *i i'* engages can be varied without departing from the invention. Thus in Fig. 9 I have shown them as consisting of two flanges, one on each edge of the flanges *a a*, and which can be produced either when cast or by forming a groove.

In Fig. 6 the sockets which receive the pin *h* are enlarged at their outer ends to receive the hub *g*, so that even when this hub is used the slats can be brought close together, if desired.

While I prefer to employ flanges substantially similar to that shown at *a*, with continuous edges—that is, unbroken from end to end—and claim as my invention the combination, with such flange, of a clamp possessing the features of mine, yet it is not necessary that the flange should be thus continuous or unbroken so long as it is so constructed that the clamp shall be allowed to slide a sufficient distance before coming into engagement with its slat.

It will be seen that each slat-support is provided with a clamp guide or way, with which the clamp engages and along which it may slide bodily (in contradistinction to a rocking or vibrating motion, which it would have if pivoted to the frame) independently of whether it is in engagement with the slat or not.

I am aware that it is old to provide seat-frames with substantially continuous flanges or ribs upon which are slid slats grooved to fit said ribs or flanges, and that keys inserted between the seat-frame and slats, or screws passing through the seat-frame and into the slats, have been used to hold such slats in place.

I am also aware that slats have been supported upon a seat-frame having a substantially continuous unbroken edge, to which frame were pivoted hooks or fasteners having T-heads, the opposite ends of which enter into sockets formed in the edge of the slats, thus holding the slats in place.

What I claim is—

1. In a seat, the combination of a slat-support having a clamp guide or way, substantially as described, the slats, and separate clamps which engage with the slats, and are each provided with a hook which engages with a face of said clampway other than the face upon which rest the slats, which clamps are movable bodily along said slat-support upon said way, substantially as set forth.

2. The combination, with a seat-frame having flange *a*, of the series of slats, an abutment at each end of the series, and the clamps formed separate from the seat-frame and the slats and connecting the slats to the frame, each situated between two of the slats and provided with an arm which partly encircles and loosely engages with the edge of the flange *a*, whereby it may slide longitudinally thereon, substantially as set forth.

3. The combination, with a seat-frame having flange *a*, with a continuous substantially unbroken edge, of the slats, an abutment or abutments against which the slats bear transversely of their length, and clamps formed separate from the seat-frame and the slats and connecting the slats to the frame, said clamps partially surrounding said flange and loosely engaging with the under side thereof, whereby they may slide longitudinally upon the flange, substantially as set forth.

4. The combination of the seat-frame having at each end a support for the slats which form the back and for the slats which form the seat, the abutments secured to the supports at the bottom of the back, the slats, and the slat-clamps formed separate from the seat-frame and the slats, and which connect the slats to the frame, and having arms which loosely engage with and partially encircle a portion of said frame, whereby they may be slid bodily along the frame into and out of engagement with the slats, substantially as set forth.

5. The combination of the frame having flange *a*, the slats, the abutments against which the slats bear transversely, the clamps having arms which engage with the edges of the slats, and other arms which partially encircle and loosely engage with the edge of the flange, whereby said clamps may slide longitudinally into or out of engagement with said slats, substantially as set forth.

6. The combination of the seat-frame having angular slat-supports provided with flanges *a*, the slats arranged in two series, stationary abutments secured to the slat-supports be-

tween the two series of slats, supplemental abutments, one at the outer end of each series of slats, and the clamps formed separate from the seat-frame and the slats, and engaging with the slats and loosely engaging with the flanges on the seat-support, whereby all the slats of one series press against the first aforesaid stationary abutments in one direction and all the slats of the other series press against it in the other direction, substantially as described.

7. The combination of the seat-frame having a flange, *a*, with a continuous substantially unbroken edge, the slats, and clamps adapted to secure the slats to the seat-frames, having pins which engage with the edges of the slats and arms which loosely inclose said flange and engage with the back thereof, whereby said clamps may freely slide longitudinally upon said flange, substantially as set forth.

8. The combination of the seat-frame, the slats provided with sockets, and clamping devices fitting between the slats, and having pins which rest in the aforesaid sockets, and provided with arms partially encircling said seat-frame, whereby they may slide longitudinally thereon, substantially as set forth.

9. In a seat, the combination, with a slat-support having a substantially unbroken edge and the slats, of a clamp which unites the slat with the slat-support, it consisting of an arm seated in the slat and a hooked arm adapted to encircle a part of the slat-support and to engage with a face thereof other than that upon which the slat rests, and whereby it is adapted to slide bodily longitudinally thereon, substantially as set forth.

10. The herein-described clamp for attaching seat-slats to their supports, it consisting of a single piece of metal having arms adapted to engage with the slats, and hooked arms extending transversely to the aforesaid arms, and which, having parallel engaging faces, are adapted to engage with parallel edges on the slat-supports, substantially as set forth.

11. A clamp or fastener for seat-slats having a slat-engaging arm, an arm, *i*, and a hook, *i'*, the parts *i i'* being adapted to embrace a portion of a slat-support, all of said parts being formed of a single piece of metal, substantially as set forth.

12. A clamp or fastener for seat-slats having arms *h h*, adapted to engage with each of two adjacent slats, and two frame-engaging hooked arms which are situated oppositely to each other, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ALOIS WINKLER.

Witnesses:
WALTER SCOTT,
MARTHA SCOTT.