

(No Model.)

3 Sheets—Sheet 2.

C. B. TOWLE.
SCHOOL DESK.

No. 553,631.

Patented Jan. 28, 1896.

Fig. 4.

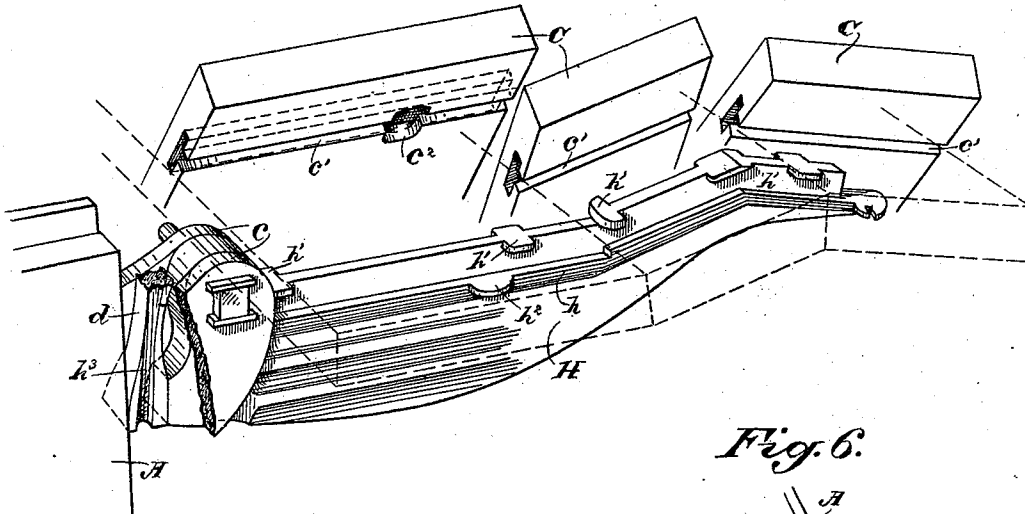


Fig. 6.

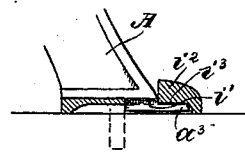


Fig. 7.

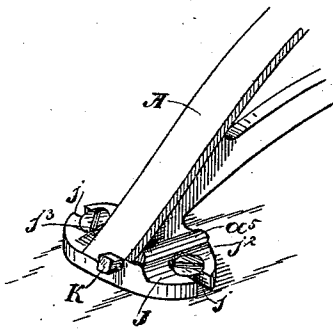


Fig. 5.

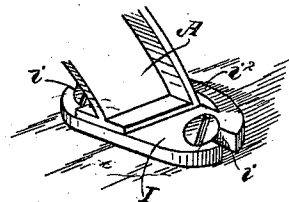
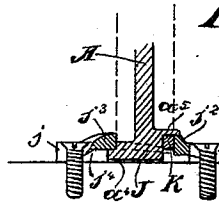


Fig. 8.



Witnesses,
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J. F. Aschbeck

Inventor

Charles B. Towle
By Dewey & Co.
attys

(No Model.)

3 Sheets—Sheet 3.

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Fig. 9.

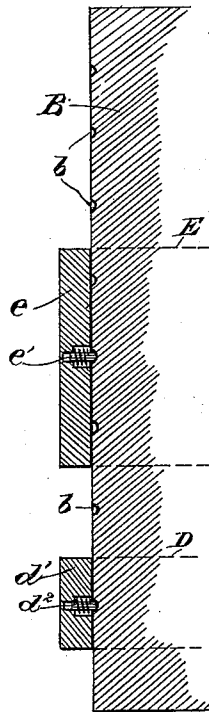
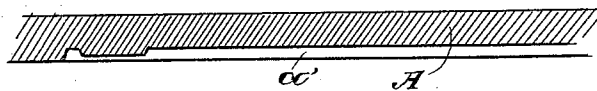


Fig. 10.



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UNITED STATES PATENT OFFICE.

CHARLES BRUCE TOWLE, OF VALLEJO, CALIFORNIA.

SCHOOL-DESK.

SPECIFICATION forming part of Letters Patent No. 553,631, dated January 28, 1896.

Application filed May 9, 1895. Serial No. 548,768. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BRUCE TOWLE, a citizen of the United States, residing at Vallejo, county of Solano, State of California, have invented an Improvement in School-Desks; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to this class of adjustable school-desks, and it consists in certain improvements which I shall hereinafter fully describe and specifically claim.

The general objects of my invention are to increase the capacity of the desk for affording comfort to the pupil and to provide for economy in the manufacture of the desk.

Other objects are to detachably fix the desk to the floor so that it will be perfectly stable while in use and yet may be readily removed by the janitor; to avoid noise in the manipulation of both the seat and the sliding top, and to avoid any loose parts which may be taken from the desk.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of my desk. Fig. 2 is a detail perspective of the upper portion of one side, the sliding top being broken to show how it is mounted. Fig. 3 is a vertical section showing the mounting of the sliding top and the fitting of the permanent top. Fig. 4 is a perspective view showing the fitting together of the seat-irons and seat-pieces, and also the hinging and locking of said irons to and in the clevises or brackets *c*. Fig. 5 is a perspective view of the rear shoe. Fig. 6 is a section of the same at right angles to the line of the screws of Fig. 5. Fig. 7 is a perspective view of the rear shoe. Fig. 8 is a section of same in the line of the screws of Fig. 7. Fig. 9 is a vertical section showing the sliding connection of the cross-piece *D* and the support *E* with the front *B* of the desk. Fig. 10 is a horizontal section showing the socketed formation of the upper ends of the grooves *a'* in the sides of the desk.

A are the sides of the desk. *B* is the front. *C* is the seat connected to the sides, by means of vertically-adjustable brackets or clevises *c*, to which the seat is hinged, whereby it may be dropped to a horizontal position for use or raised to an approximately vertical position to lie against the front of the desk out of the

way. The construction of these seat brackets or clevises and the manner in which they are rendered adjustable need not be herein specifically explained, as they form no part of my present improvements.

D is the cross-piece which helps to shape the seat and fills in a portion of the space between the seat and the desk-front. This cross-piece has metallic arms *d* which extend down into the front of the clevises and form a lock for them. They also form a bearing against which the seat-irons bear to hold the seat in a horizontal position. These features are substantially similar to those heretofore disclosed in my prior patent, No. 403,795, of May 21, 1889. The cross-piece was heretofore, however, entirely separate, and could be removed from the desk, and this was a fact which would necessarily become known, as it had to be lifted out of place to unlock the brackets or clevises, whereby the latter could be adjusted. My improvement in this respect consists in providing for the permanent attachment of this cross-piece to the desk, so that it cannot needlessly be removed.

This improvement, though it may be carried out by any suitable sliding connection, is best effected by providing the ends of the cross-piece *D* with slides *d'* fitted over the ends of the front *B* of the desk, said slides having within them spring-controlled catches *d''*, which engage automatically with sockets *b* in the ends of the front *B*. With this construction whenever it is necessary to lift the cross-piece from its position its slides will travel up the ends of the front piece, holding the cross-piece to it, and the spring-catches will hold it in any elevated position while the adjustment of the seat is being effected. Then the cross-piece can be lowered again to its original position; but in this manipulation, it will be seen, the cross-piece remains connected with the desk through its slides, which are fitted to the front.

Another improvement consists in the adjustable rest or support for the back of the pupil. This consists of a suitably rounded or fashioned strip *E*, extending horizontally the length of the front *B*, and secured to said front in such a manner that it may be readily raised and lowered to conform to the desired position and afford the necessary comfort to

the back of each pupil. This support E, in connection with the curved cross-piece D below and rounded top of the front piece above, makes a support to fit the back of any pupil.

5 The smaller the pupil the higher the seat will be raised to bring his arms in proper position over the sliding top, and the larger (longer bodied) the pupil the lower the seat will be placed for the same purpose, so that the combination of curved lock-piece below, the small-
10 of-back support above that, and the rounded upper part of straight back still above will make a perfectly-fitting support for every pupil who may occupy the seat and desk. The
15 short-bodied pupil has a back-support just high enough for him, and not too high, and the long-bodied pupil has one high enough for him, and not too low nor too high. The connection of this rest or support with the
20 front B, enabling it to be moved up and down, may be of any suitable character.

I have here shown as the best means the end slides *e*, having within them spring-controlled catches *e'*, adapted to engage automatically the sockets *b* in the ends of the
25 front piece.

F is the sliding top of the desk, and G is the permanent top below the sliding top. The sliding top has grooved cleats *f*, which engage
30 and slide on the flanged tops *a* of the sides of the desk. In the tops of said sides are formed grooves *a'*, in which spring-controlled catches *f'* on the inner surfaces of the slide-cleats *f* are adapted to play freely and to be
35 limited by the ends of said grooves, which thus form stops. The forward stops or ends are so located that when the spring-controlled catches come in contact with them they limit the forward movement of the sliding top, and
40 this limit takes place just before the edge of said top reaches the front, so that no noise results from the closing of the sliding top, as would be the case if it were slammed up against the front. The forward ends of grooves
45 *a'* are in the form of sockets, the lower wall of which is just high enough to hold the catch, except where a little force is applied. They thus hold the sliding top in position just enough to prevent its sliding downward un-
50 less pulled with some little force. The sliding top slants considerably toward the pupil to accommodate its surface to his arms when holding a book or when writing. This slant is much more than in other school-desks; but
55 I find that after some use these sliding tops move downward very easily, so that a step on the floor or a touch causes them to slide a few inches, and thus leave the books, papers, &c., exposed when the janitor is sweeping;
60 but by the socketed stop in the upper end of the grooves *a'* the spring-catch will be easily pushed over it when moved upward, but will require a little pull on the sliding top to force the catches over the partial stops, so that the
65 top may be brought to the person seated. Thus the sliding top will remain closed when not wanted in any other position. In the

grooves *a'* the catches do not touch anywhere, so they will not cause any noise at any point.

The sliding top and the front remain separated by a small space, which is covered by a bead *b'* on the back of said front. The lower ends of grooves *a'* are in a position to limit the projection of the sliding top toward the scholar and prevent it from being drawn
75 completely from its seat.

In the furtherance of the object to economize in the manufacture of the desk I have avoided the use of screws to a great extent, so that very little machine-work need be made
80 upon the castings or holes made in the wood-work. This object I have accomplished by uniting the metal with the wood in such a way as to avoid the use of screws and still give a secure fastening.
85

Referring now to the irons H which support the seat, these irons are formed near one edge with a shoulder or ledge *h* on each side and along the edge with lugs *h'* projecting at right angles therefrom.
90

In the bottom of the seat-pieces are made T-shaped grooves *c'*. The leg of the groove is deep enough to receive the edge of the seat-iron up to the ledge or shoulder *h*, while the arms of the grooves receive the lugs *h'* of said iron. In such connections as are possible the
95 irons are fitted to these grooves by slipping them in the ends thereof, but where not possible, as where the grooves do not extend to the edges of the wood, enlargements *c²* are made leading into the arms, said grooves and
100 said enlargements being sufficient to receive the lugs *h'* on the edges of the irons, so that said lugs may find a path down into their seats, and then the irons or the wood may be
105 driven along to carry the lugs out of alignment with said enlargements, thereby fastening the irons to the wood. In order to cover these enlargements, flanges *h²* are made upon the shoulders *h* about opposite where the en-
110 largements will lie when the parts are driven to place. Precisely the same connection is formed between the sides A and the front piece B, and as they are identical I need not describe the details of the latter connection.
115

The permanent top G is fitted in grooves or channels *a²* in the sides A, but instead of being screwed therein, in any place, they are fully secured by lips *a³* cast upon the lower
120 walls of said channels or grooves, said lips fitting in grooves in the permanent top.

The top is fitted to the channels before the front is placed on, and is then driven along the channels until its grooves tightly engage these cast securing-lips.
125

In order to prevent the noise which would naturally follow the dropping of the seats, thereby causing the contact of the seat-irons with the stops in their brackets or clevises, I make the rear lower portions of said seat-
130 irons somewhat thickened or wedge-shaped, as shown at *h³*, so that as these thickened portions pass in between the walls of the brackets or clevises the seat will have its down-

ward speed gradually and in fact almost wholly slackened or arrested before it reaches its limit, and when it does reach it, it will be gently and without noise.

5 In order to fasten the desks to the floor, so that they cannot be needlessly moved, but at the same time can be removed with a purpose, I have the following connections: I is a casting forming one of the front shoes of the desk. It is entirely independent of the feet of the desk and it is cast with a socket i on each side adapted to fit under the head of a permanently and previously-located screw in the floor. It is also cast with a central aperture i' , which is bounded above on its front wall by a raised shoulder i^2 and has underneath said front wall a recess i^3 . The foot of the side of the desk is provided with a projecting toe a^3 . This toe passes down through the opening i' of the shoe and fits in the recess under the front thereof, while the front of the foot bears against the shoulder i^2 of the shoe.

J is one of the shoes for the back feet of the desk. This is a casting formed with side sockets j for fitting under the heads of the permanent screws; and it is cast with a central opening j' , one side wall of which is bounded by a raised shoulder j^2 and the other side wall is bounded by another raised shoulder j^3 on top, and underneath it is provided with a recess j^4 .

The inner side of the rear feet of the desk is provided with a projecting flange a^4 which passes through the opening in the shoe and enters the recess j^4 while the side of the foot bears against the shoulder j^3 . Now, between the other shoulder j^2 and the outside of the foot a small wedge, such as K, of wood or iron, is driven, thereby pressing the foot firmly over into the shoe and causing the engagement of the flange a^4 with the recess under the shoe to be a permanent one. When this is effected, the front feet are also held in their shoes, and as long as the wedges remain in place the desk is secured to the shoes. The wedges are covered out of sight and held secure in place by a shoulder a^5 cast on the outer side of each rear foot, and they cannot be easily removed by pupils. To remove them, all that has to be done is to drive the wedges out, whereupon the back feet may be lifted from the shoes and then the front feet may be easily removed.

55 L is the foot-rest, extending between the lower portion of the sides of the desk. This foot-rest is a removable one and may be placed below in position, when in use, and readily removed and fixed in a position higher up, out of the way, so that the janitor may sweep without interference.

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

65 1. In a school desk, the combination of the seat having the seat irons, the clevises or brackets to which the seat irons are hinged,

the cross piece having the arms extending down into the clevises, the front piece of the desk, and a sliding permanent connection between the cross piece and the front piece comprising catches on one piece adapted to engage the other piece whereby the cross-piece may be raised and lowered on the front piece and remain with it.

2. In a school desk, the combination of the seat having the seat irons, the clevises or brackets to which the seat irons are hinged, the cross piece having the arms extending down into the clevises, the front piece of the desk and a connection between the cross piece and the front piece consisting of the end slides of the cross piece having the spring-controlled catches, and the sockets in the ends of the front piece.

3. In a school desk having a seat, the back of which is formed by the front of the desk to which the seat is attached, a back piece vertically adjustable over said front, and having end slides embracing the ends of the front, and spring-actuated catches in said end slides adapted to engage sockets in the ends of the front piece for locking the back piece in its adjusted position.

4. In a school desk having a seat, the back of which is formed by the front of the desk to which the seat is attached, a vertically adjustable back rest or support secured to the front of the desk, and means for effecting its adjustment consisting of the end slides of said support or rest, having the spring-controlled catches, and the sockets in the ends of the front piece of the desk.

5. In a school desk and in combination with the seat, and the desk front, having a rounded upper edge, the vertically adjustable cross-piece, and the vertically adjustable rest or support E, said cross piece and rest or support having end slides embracing the ends of the desk front and means comprising spring-actuated catches in the slides and sockets in the ends of the desk front for locking the cross piece and rest or support in their adjusted positions.

6. In a school desk, the combination of the sides, the front, the sliding top having the grooved cleats on which it slides, and the means for preventing the sliding top from coming in contact with the front of the desk when pushed up, consisting of the transversely mounted spring-controlled catches to be projected from the inside of its cleats and adapted to engage with stops in the sides of the desk.

7. In a school desk, the combination of the sides, the front, the sliding top having the grooved cleats on which it slides, the means for preventing the sliding top from coming in contact with the front of the desk when pushed up, consisting of the spring-controlled catches on the inside of its cleats adapted to engage with stops in the sides of the desk, and a bead on the back of the front of the desk for covering the space between the sliding top and said front.

8. In a school desk, the combination of the sides, the front, the sliding top of the desk having the grooved cleats, the grooves *a'* in the tops of the sides of the desk, the spring
 5 controlled catches in the cleats of the sliding top engaging said grooves, whereby the upward and outward limits of the sliding top are controlled, and the socketed upper ends of
 10 said grooves for holding the sliding top up against accidental displacement.

9. A means for connecting the rear feet of a school desk to the floor, consisting of a casting forming the shoe, having means at each side for securing it to permanent screws, and
 15 a central opening bounded on one side on top by a shoulder, and at the other side on top by another shoulder and underneath having a recess, a flange on the side of the foot adapted to enter the opening of a shoe and pass into
 20 the recess, a shoulder on the outer side of the foot, and a removable key or wedge driven under the shoulder on the outer side of the foot, and against the shoulder on that side of the shoe.

25 10. A means for securing the desk to the floor consisting of shoes, those for the front

feet being formed of castings, and having means for securing them to permanent screws, said shoes having a central opening with a front shoulder on top and a recess underneath
 30 and a toe or flange on the foot of the desk for entering the hole of the shoes and fitting in the recess under the shoulder thereof, and those for the rear feet consisting of castings having means at each side for securing them
 35 to permanent screws, and a central opening bounded on one side on top by a shoulder, and at the other side on top by another shoulder, and underneath having a recess, a flange on the side of the foot adapted to enter the opening
 40 of a shoe and pass into the recess, a shoulder on the outer side of the foot, and a removable key or wedge driven under the shoulder on the outer side of the foot and against the shoulder on that side of the shoe.
 45

In witness whereof I have hereunto set my hand.

CHARLES BRUCE TOWLE.

Witnesses:

ROB. B. BARR,
 JAMES BROWNLIE.