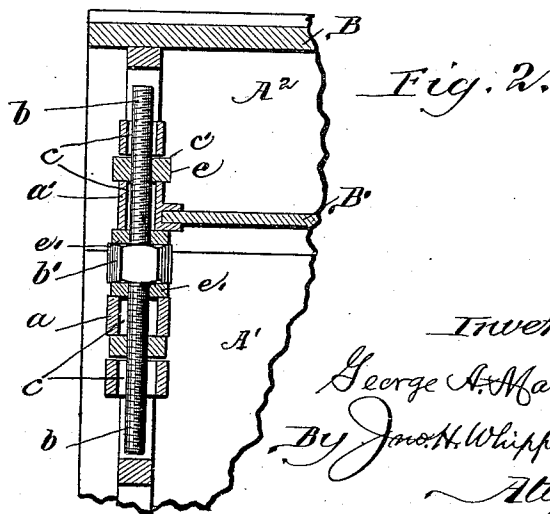
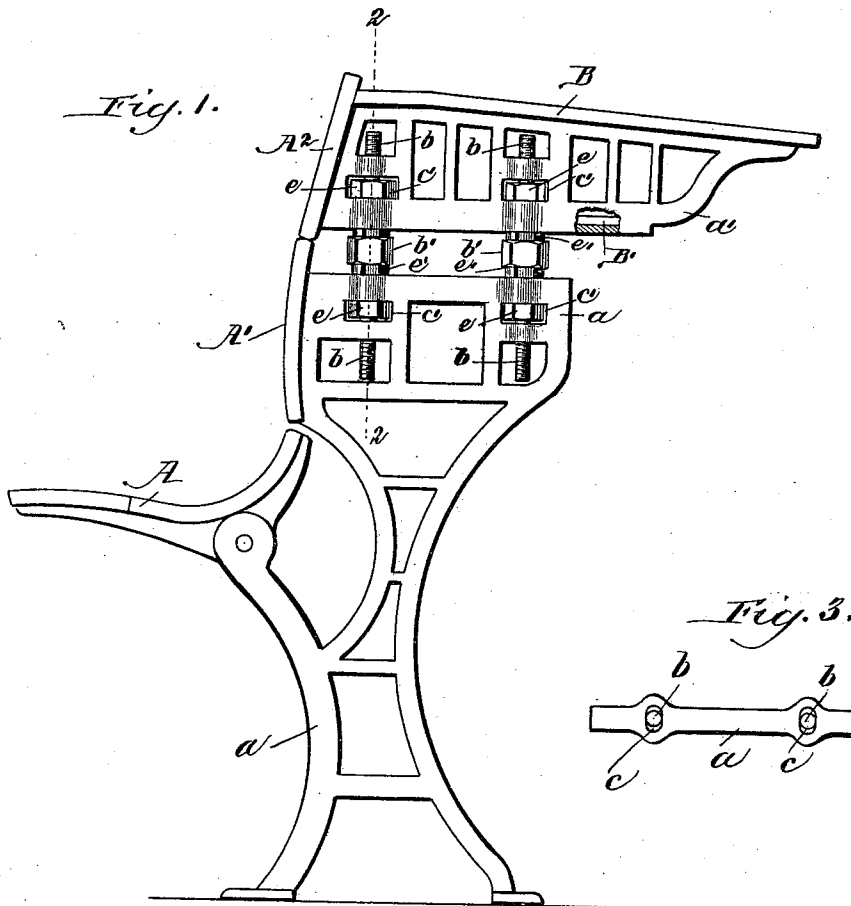


(No Model.)

G. A. MASTERS.  
SCHOOL DESK.

No. 473,074.

Patented Apr. 19, 1892.



# UNITED STATES PATENT OFFICE.

GEORGE A. MASTERS, OF CHICAGO, ILLINOIS.

## SCHOOL-DESK.

SPECIFICATION forming part of Letters Patent No. 473,074, dated April 19, 1892.

Application filed April 13, 1891. Serial No. 388,645. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. MASTERS, of Chicago, in the State of Illinois, have invented certain new and useful Improvements in School-Desks, of which the following is a specification.

My invention relates to adjustable school-desks; and the object of my improvements is to provide means for conveniently adjusting such desks to different heights in order to make them better subserve the purposes for which they are designed. I have attained this object by the means illustrated in the accompanying drawings, in which—

Figure 1 is an end elevation of a school-desk containing my invention. Fig. 2 is an enlarged fragmentary vertical section taken on the line 2 2 of Fig. 1, looking toward the left, and representing a cross-section of a portion of one of the end frames and a longitudinal section of a portion of the shelf and top of such desk. Fig. 3 is a detail showing a plan or top edge view of a part of one of the end frames of such desk.

In the drawings, A designates the seat, A<sup>2</sup> the back pieces, B the top, and B' the shelf, which are all of ordinary construction, and they are connected to the end frames in the ordinary manner.

The means which I have provided for adjusting the desk to different heights consists in making the end frames in separate sections *a a'* and connecting them by screw-rods *b*. There are four of said screw-rods—two at each end of the desk. In the center said rods are each provided with an enlarged part *b'*, fixed firmly thereto, so that said rods may be rotated thereby with the hand or by means of a wrench applied thereto. Said rods pass through openings *c* in the parts *a a'*, which openings are either made oblong, as shown, or considerably larger than said rods, so as to afford sufficient play to avoid the binding of said rods or racking the desk by any throwing of the parts out of square or normal position in the operation of adjusting, as by raising or lowering the ends of the desk separately. The parts *a a'* have transverse openings *c'* in the line of the openings *c*, which are adapted to receive and hold each a nut *e*, which is put in place before the rod *b* is en-

tered, the transverse openings holding the nut from turning, so that the rotation of the rod will cause the threads of the screw to operate and raise or lower the part *a'* of the end frame. Said nuts *e* have a sufficient vertical play in the openings *c'* to be variable from their horizontal plane, in order to prevent any binding of the rods therein during the adjusting of the desk for the reason before mentioned. The parts of said rods opposite to the part *b'* have their threads run in opposite directions, so that the rotation of said rods will cause the nuts *e e* thereon to move in opposite directions, in order to expedite the operation of adjustment.

For the purpose of fixing the desk in any desired adjustment two jam-nuts *e'* are provided on each of said rods, one to bear against the part *a* and another to bear against the part *a'*, whereby said rods may be fixed rigidly in said parts *a a'*.

In the illustrations the desk is shown as set in its lowest adjustment. By turning the rods *b* to the right the jam-nuts will turn with the same, permitting the nuts *e* to move apart and elevate the top part *a'*. When the proper height is reached, the jam-nuts above the part *b'* should be set up against the part *a'* and the one below it down against the part *a*.

It is essential that the top part of the desk should be supported on at least three points of support—that is to say, there should be at least three of the rods *b* connected with the end frames, substantially in the manner shown, in order to properly support the top and permit it to be adjusted in the manner described; but four of said rods *b* are contemplated, two in each of the end frames, as constituting the best embodiment of my said invention.

The rods *b* as here shown are adapted to the minimum of standard height of school-desks and designed to permit of an elevation from that to the maximum standard height of the same.

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

1. In a school-desk, and in combination, the end frames made in separate sections, as *a a'*, screw-rods *b b*, having swivel flexible connec-

tion with said sections, adapted to secure them to one another and allow flexion between them, and screw-thread connection adapted to adjust said sections toward and from one another, and the parts  $b' b'$  for revolving said rods, substantially as specified.

2. In a school-desk, and in combination, the end frames made in separate sections and provided with openings  $c$  and transverse openings  $c'$ , intersecting each other, screw-rods fitting loosely in the openings  $c$ , nuts  $e$ , fitting in said transverse openings and having slight vertical play therein, and the parts  $b'$ , fixed to said screw-rods, substantially as and for the purpose specified.

3. In a school-desk, and in combination, the end frames made in separate sections  $a a'$  and provided with intersecting openings  $c c'$ , rods

$b$ , having the parts  $b'$  near their center and provided with threads running in opposite direction on each side of said parts  $b'$ , and nuts  $e$ , in connection with said rods and both of said sections  $a a'$ , as and for the purpose specified.

4. In a school-desk, and in combination, the end frames made in separate sections  $a a'$ , having intersecting openings  $c c'$ , screw-rods  $b$ , provided with the parts  $b'$  near the center and right and left hand threads at their opposite ends, screw-nuts  $e$ , and jam-nuts  $e'$ , all connected and adapted to operate as and for the purpose specified.

GEORGE A. MASTERS.

Witnesses:

WM. R. GRISWOLD, Jr.,  
ROBERT VAN SANDS.