T. KUNDTZ.

COMBINED SCHOOL DESK AND SEAT.

APPLICATION FILED FEB. 18, 1909.

957,426.

Patented May 10, 1910.

3 SHEETS—SHEET 1.

Fig. 1.

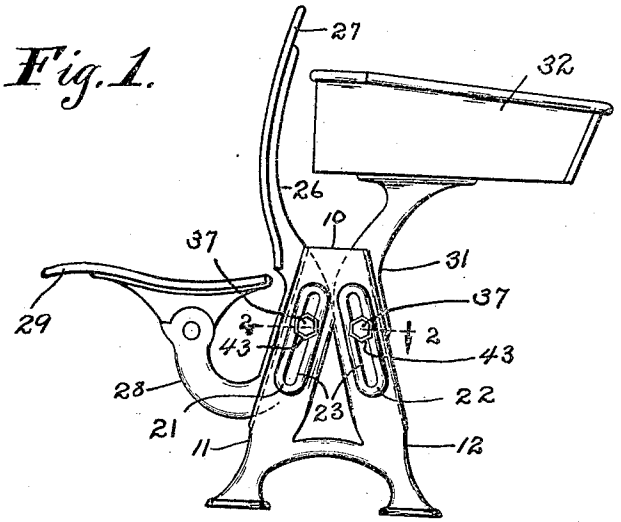
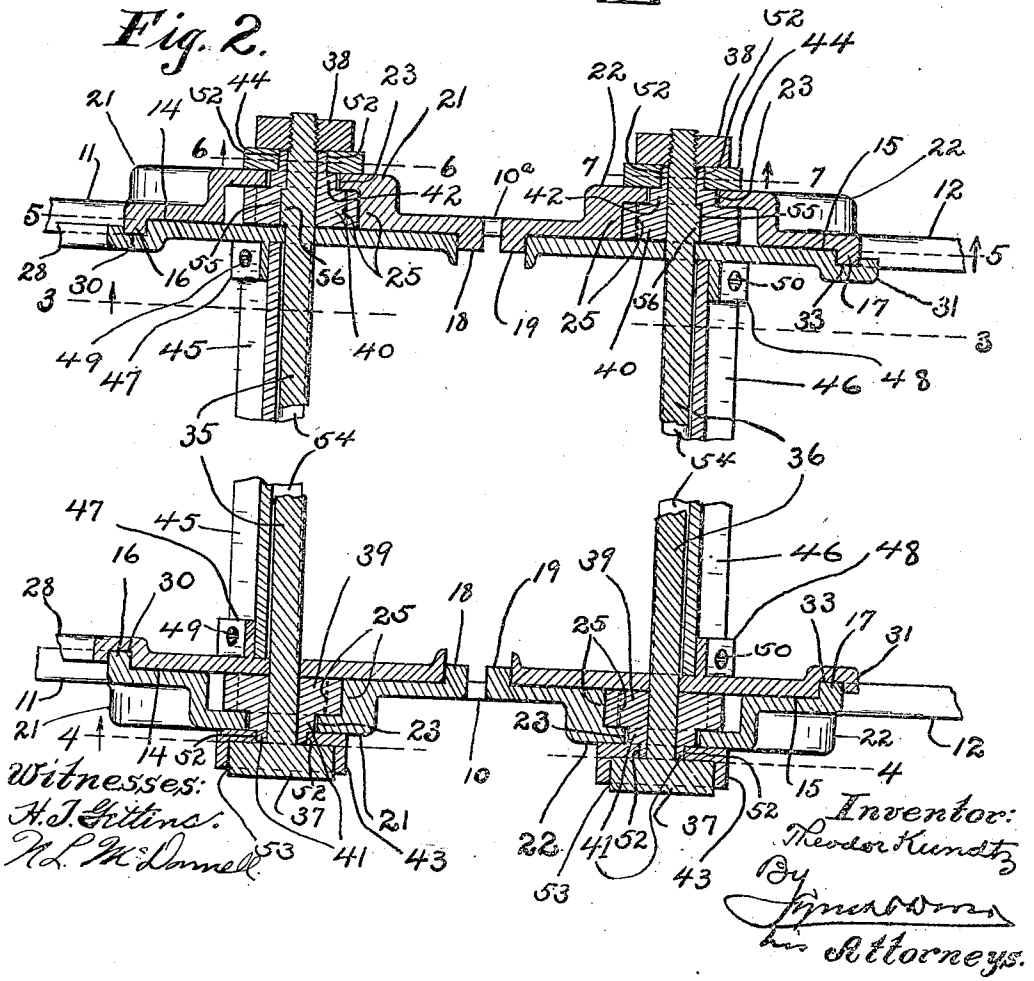


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3.

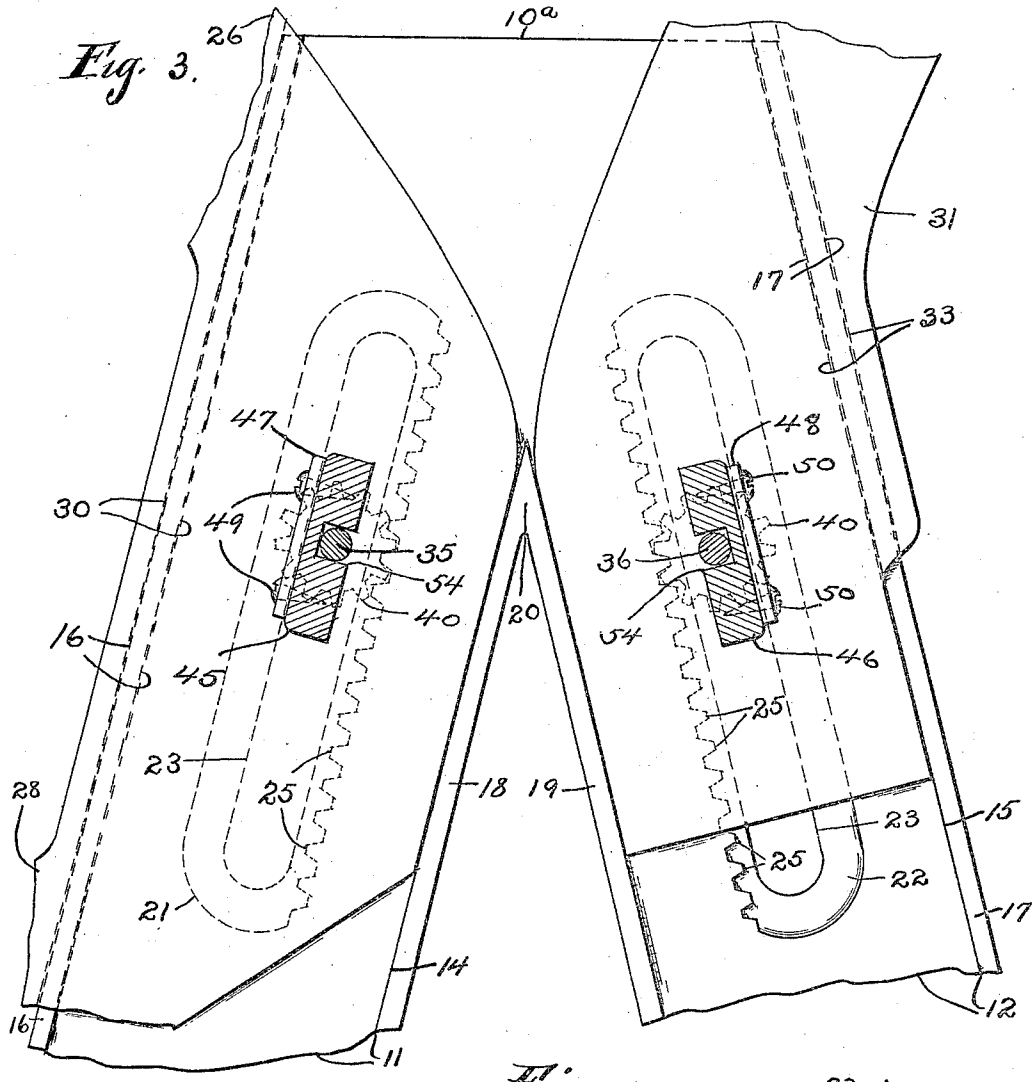
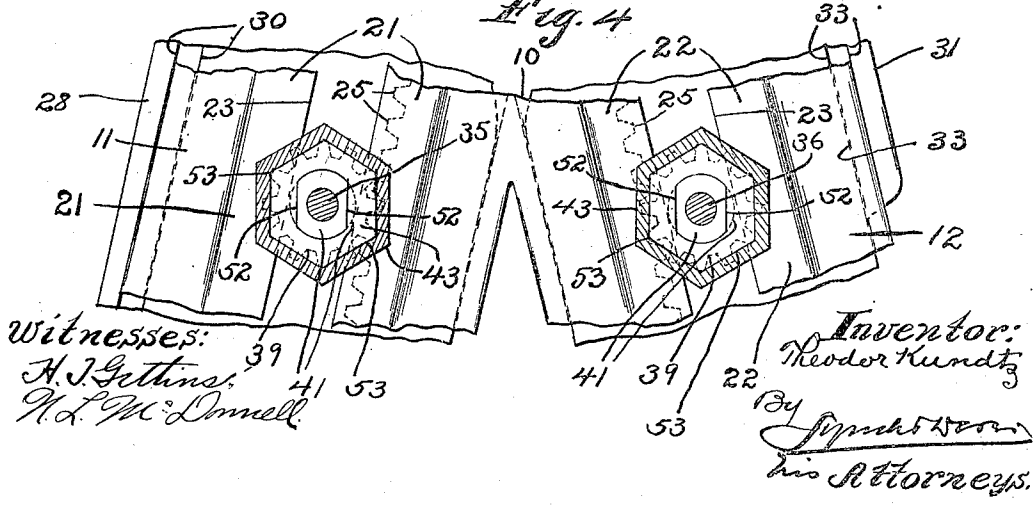


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

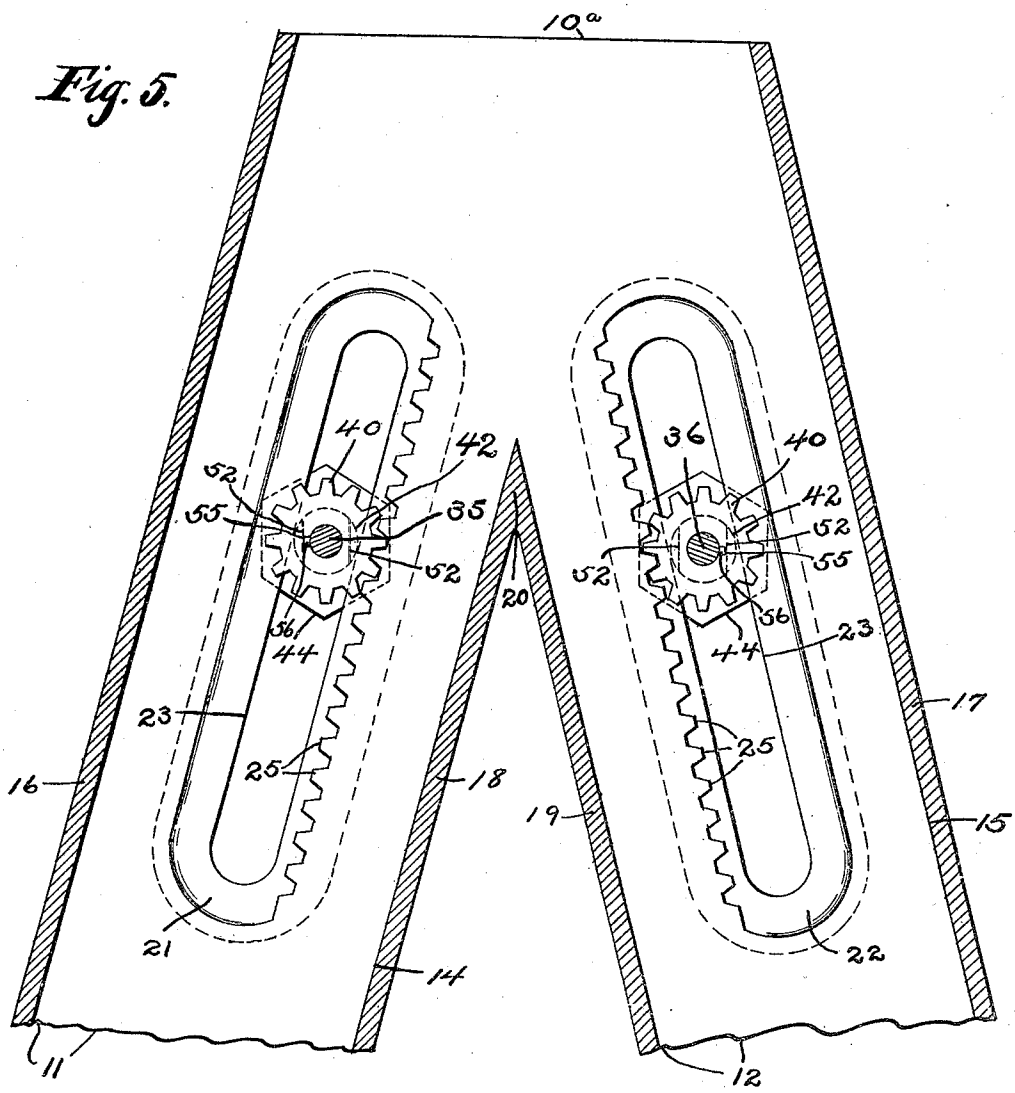


Fig. 6.

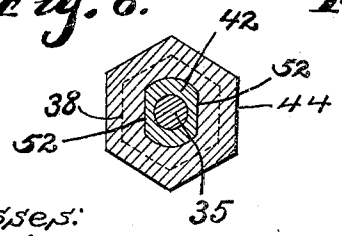
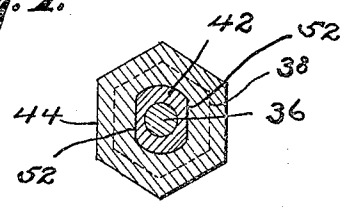


Fig. 7.



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UNITED STATES PATENT OFFICE.

THEODOR KUNDTZ, OF LAKEWOOD, OHIO.

COMBINED SCHOOL DESK AND SEAT.

957,426. Specification of Letters Patent. Patented May 10, 1910.

Application filed February 18, 1909. Serial No. 478,679.

To all whom it may concern:

Be it known that I, THEODOR KUNDTZ, a citizen of the United States of America, residing at Lakewood, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Combined School Desks and Seats; and I hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to combined school-desks and seats, and particularly to that type wherein the desk and the seat and its back-rest are adjustable up and down, and wherein the seat is adjustable toward and from the desk and the latter from and toward the seat.

One of the objects of this invention is the provision of a combined school-desk and seat having a construction such that the desk and the seat may be adjusted up and down and laterally with respect to each other from one side of the desk and wherein the lateral adjustment of the movements of the seat and the desk toward and away from each other are divided or distributed between the said parts by providing in each side frame or standard two guideways for a seat-supporting bracket and a desk-supporting bracket, respectively, both of which guideways are inclined and converge upwardly.

A further object is to be able to adjust the seat and the desk and to clamp them in adjusted positions, from one and the same side of the desk.

A further object is the provision of an adjusting and clamping mechanism which is strong, durable and effective.

A still further object is the provision of a combined school-desk and seat not only with simple and efficient adjusting and clamping mechanism but to render the whole durable and attractive in appearance.

With these objects in view, and to the end of realizing other advantages hereinafter appearing, this invention consists in certain novel details of construction, and combinations and arrangements of parts, hereinafter described, pointed out in the claims and illustrated in the accompanying drawings.

In the said drawings, Figure 1 is a side elevation of a combined school-desk and seat constructed in accordance with my invention. Fig. 2 is a horizontal sectional view taken substantially along the line 2—2, Fig. 1, looking in the direction indicated by the arrow, and portions are broken away in Fig. 2 to reduce the size of the drawing. Fig. 3 is a partial vertical section taken substantially along the line 3—3 of Fig. 2 looking in the direction indicated by the arrow. Fig. 4 is a section taken through part of the adjusting and clamping mechanism, the section being taken substantially along the line 4—4 of Fig. 2, looking inwardly. Figs. 5, 6 and 7 are vertical sections on line 5—5, line 6—6 and line 7—7, respectively, Fig. 2, looking outwardly. Fig. 1 is drawn on a smaller scale than the succeeding figures.

Referring to Figs. 1 and 3 of the drawings, 10 and 10^a represent respectively two similar supporting cast-iron frames or standards for the combined school-desk and seat, each of these standards being cast in one integral piece and, as here shown, having a shape like a letter A. Each standard has two inclined legs 11 and 12 which converge upwardly and at the lower ends are adapted to rest upon the floor (not shown). On the inner face or side of each standard (see Figs. 2, 3 and 5) are two recesses or guideways 14 and 15 for receiving slides or brackets to be hereinafter referred to, which guideways are inclined and converge or slope toward each other in the direction of the upper end of the standard, and these guideways are formed in the legs 11 and 12 by outer upwardly converging ridges or flanges 16 and 17 formed on the legs 11 and 12 respectively and by inner upwardly converging ridges or flanges 18 and 19 formed on the legs 11 and 12 respectively, said flanges 18 and 19 meeting at their upper ends and there forming an upwardly pointing lug or projection 20. The said guideways 14 and 15 open into each other above the said lug 20. The legs 11 and 12 of each standard are provided between the flanges forming the guideways 14 and 15 of the said standard with laterally and outwardly offset portions 21 and 22 respectively, said offset portions extending up and down the legs and forming runways for pinions to be described later. Each offset portion of each standard has an elongated slot 23 extending up and down the said offset portion, and one of the internal side walls of each of the said offset portions is provided with teeth spaced up and down thereof to form a stationary

rack-bar or rack 25 which is consequently arranged up and down the said standard.

Engaging the guideways 14 of the forward legs of the two standards are brackets for the seat and its back-rest, said brackets having respectively an upwardly projecting arm 26 to which the back-rest 27 is secured in any suitable manner, and having also respectively a downwardly and thence upwardly curved arm 28 from which the seat 29 is supported. Each standard has its flange 18 engaged by one of the side edges of one of the said brackets and this bracket is provided with an inclined groove 30 (shown very clearly in Figs. 2 and 3) which engages the flange 16 of the said standard and extends up and down through the bracket, as shown in dotted lines in Fig. 3.

Engaging the inclined guideways 15 in the rear legs 12 of the two standards are two desk-supporting slides or brackets 31 having upwardly and rearwardly projecting arms to which the desk 32 is suitably secured. Each of the brackets 31 is provided with an inclined edge which engages the inner side of the flange 19 of the corresponding standard and with an inclined groove 33 (shown very clearly in Figs. 2 and 3) which engages or receives the flange 17 of the said standard and extends up and down through the bracket, as shown in dotted lines, Fig. 3.

The mechanism for adjusting and for clamping the brackets in their adjusted positions will now be explained. Extending horizontally between the forward legs 11 of the two standards and loosely through the two supporting brackets for the seat and its back-rest and through the slots 23 of the forward legs of the standards, is a solid shaft 35 which carries or supports the said brackets. Extending horizontally between the two rear legs 12 of the standards and loosely through the two desk-supporting brackets 31 and through the slots 23 in the said rear legs is a second solid shaft 36. Each shaft is provided at one end at the outer side of the standard 10 with an integral polygonal head 37, and the said shaft is screw-threaded at the opposite end and there provided with a clamping nut 38 at the outer side of standard 11. Each shaft is provided near its head 37 with a pinion 39 located in the runway formed by the elongated adjacent offset portion (21 or 22 as the case may be) of the standard 10, and intermediate the inner face or side of the standard 10 and the outer sides of the adjacent brackets the pinions 39 engage with racks 25 formed on the said standard as hereinbefore described. Near its threaded end each shaft is provided with a pinion 40 which is located in the runway formed by the elongated adjacent offset portion (21 or 22 as the case may be) of standard 10^a, and intermediate the inner face or side of the said standard 10^a and the outer sides of the adjacent brackets the pinions 40 engage with racks 25 formed on the said standard as hereinbefore described.

The pinions 39 are provided with hubs 41 which project outwardly beyond the outer side of the standard 10 through the slots 23 in the standard, and the pinions 40 are provided with hubs 42 which extend outwardly beyond the outer side of the standard 10^a through the slots 23 in this standard, the outer end portion of each hub of each pinion having two opposite flat parallel sides or faces 52, the purpose of which will be explained presently. Each of the shafts 35 and 36 is provided adjacent its integral head 37 with a washer 43 located intermediate the said head, and the outer side of the standard 10, which washer is mounted on the hub 41 of the adjacent pinion 39 and internally conforms to and engages the flattened faces 52 of the said hub and has a socket or recess 53 which receives and internally conforms to the said head. The said socket therefore has a polygonal shape corresponding to the polygonal shape of the said head and is of such size that the said head will fit nicely within the socket but can not turn within and independently of the socket. The said socket therefore has a polygonal shape corresponding to the polygonal shape of the said head, and is of a size such that the head will fit nicely therein, but can not turn within and independently of the socket.

The pinions 39 are not keyed to the shafts or otherwise secured directly thereto, but are operatively connected with the shafts by the construction just described,—namely, by means of the washers 43 which partially inclose the heads of the shafts and rotate therewith and which engage also the flattened faces 52 of the hubs of the pinions 39 so that the pinions must rotate with the washers which are operatively connected and must therefore rotate with the shafts. With this arrangement and construction are obtained strong and durable driving connections between the pinions 39 and the shafts.

Between each nut 38 and the outer side of the standard 10^a is located a washer 44 which is mounted on the hub 42 of the adjacent pinion 40 and engages and internally conforms to the flattened faces 52 of the hub so as to cause the said pinion, and consequently the shaft bearing the said pinion, to rotate with the said washer upon turning the washer by means of a wrench or otherwise after loosening the said nut. Each pinion 40 to establish operative connection between it and the shaft having the said pinion is provided internally with a recess 55 engaged by a lug 56 formed on the shaft, as shown in Figs. 2 and 5.

It will be observed that when the nuts 38 are tightened the brackets will be clamped

tightly to the standards, and when the nuts 38 are loosened the shafts can be rotated by applying a wrench or other tool to the washers 44 which, as stated before must rotate with the shafts on account of the flattened portions of the pinion-hubs upon which the nuts are mounted. With this construction, therefore, the seat and the desk can be adjusted and can be tightened in any adjusted position from one side of the desk and, at the same time, very strong and durable adjusting and clamping mechanism is provided. It is apparent also that with the above described construction, the different parts of the adjusting and clamping mechanism can be easily assembled or taken apart.

A wooden bar 45 extends substantially horizontally between and is connected at its ends to the seat-supporting brackets, being preferably removably secured by means of screws 49 to lugs 47 which are formed on the said brackets at the inner sides of the brackets. Another wooden bar 46 extends between and is connected at its ends to the desk-supporting brackets, being preferably removably secured by means of screws 50 to lugs 48 which are formed on the said brackets at the inner sides of the brackets. The bars 45 and 46 partially inclose and extend longitudinally of the shafts 35 and 36 respectively, and are provided in their adjacent sides with slots or recesses 54 which extend from end to end of the bars and receive the shafts and thereby practically conceal the latter from view. That is, the bars 45 and 46 are so arranged relative to the shafts 35 and 36 respectively that the bars cover the outer sides of the shafts and extend over and under the shafts. By this construction the metal shafts do not require polishing or finishing to render them sightly, because the wooden bars 45 and 46 are susceptible of a finish corresponding with the finish of the desk and the seat and its back-rest so that the whole structure may be rendered more attractive in appearance. The bars also protect the shafts in that they prevent pupils and janitors from knocking against the shafts with their feet or otherwise and thereby springing the shafts.

It will be observed also that by having the guideways 14 and 15 of each standard not only converging upwardly but meeting at their upper ends so as to form the wedge-shaped lug 20 between them the seat-bearing bracket and the desk-carrying bracket at each side of my improved combined school-desk and seat are brought as close together as possible so that the sides of the standards may be reduced to a minimum.

What I claim is:—

1. In combination, in a combined school-desk and seat, a pair of laterally spaced standards, each having on its inner side two inclined guideways which converge upwardly and are arranged the one forward of the other, each standard having an upwardly pointing wedge-shaped lug between the upper portions of the guideways; a seat and back-rest for the seat; brackets supporting the seat and its back-rest and arranged to be adjusted along the forward guideways of the standards; a desk; desk-supporting brackets arranged to be adjusted along the rear guideways of the standards, and means for clamping and adjusting the positions of the brackets.

2. The combination, in a combined school-desk and seat, with two laterally spaced standards, a pair of brackets which are arranged at the inner sides of the different standards respectively and adjustable up and down the standards; a solid shaft arranged horizontally and extending between the standards and through and supporting the brackets and through and a suitable distance beyond the outer sides of the standards, said shaft being provided at one end and a suitable distance from the outer side of one of the standards with a head and at its opposite end and at the outer side of the other standard being screw-threaded; a correspondingly threaded nut mounted on the threaded end of the shaft a suitable distance from the outer side of the adjacent standard; a pinion mounted on the shaft and arranged at the inner side of the standard which is adjacent the head, said pinion having a hub projecting outwardly through and a suitable distance beyond the outer side of the last-mentioned standard toward the said head and provided with a flat side; a washer intermediate the shaft-head and the adjacent standard and mounted on the said hub, said washer having such a connection with the shaft-head that the shaft can not turn independently of the pinion; another pinion operatively mounted on the shaft and arranged at the inner side of the standard which is adjacent the aforesaid nut; a washer interposed between the nut and the outer side of the last-mentioned standard, and racks rigid with the standards and engaging with the pinions at one and the same side of the shaft, and the standards being slotted to accommodate the location and shifting of the shaft during a readjustment of the brackets.

3. The combination, in a combined school-desk and seat, with two laterally spaced standards; a pair of brackets which are arranged at the inner sides of the different standards respectively and adjustable up and down the standards; a solid shaft arranged horizontally and extending between the standards and through and supporting the brackets and through and a suitable distance beyond the outer sides of the standards, said shaft being provided at one end and a suitable distance from the outer side

of one of the standards with an integral polygonal head and at its opposite end and at the outer side of the other standard being screw-threaded; a correspondingly threaded nut mounted on the threaded end of the shaft a suitable distance from the outer side of the adjacent standard; a pinion mounted on the shaft and arranged adjacent the head of the shaft and at the inner side of the standard which is adjacent the head, said pinion having a hub projecting outwardly through and a suitable distance beyond the outer side of the last-mentioned standard toward the said head and provided with flat sides; a washer intermediate the shaft-head and the adjacent standard and mounted on the said hub, said washer having a member which embraces and internally conforms to the shaft-head; another pinion operatively mounted on the shaft and arranged at the inner side of the standard which is adjacent the aforesaid nut; a washer interposed between the nut and the outer side of the last-mentioned standard, and racks rigid with the standards and engaging with the pinions at one and the same side of the shaft, and the standards being slotted to accommodate the location and shifting of the shaft during a readjustment of the brackets.

4. The combination, in a combined school-desk and seat, with two laterally spaced standards; a pair of brackets which are arranged at the inner sides of the different standards respectively and adjustable up and down the standards; a solid shaft arranged horizontally and extending between the standards and through and supporting the brackets and through and a suitable distance beyond the outer sides of the standards, said shaft being provided at one end and a suitable distance from the outer side of one of the standards with a head and at its opposite end and at the outer side of the other standard being screw-threaded; a correspondingly threaded nut mounted on the threaded end of the shaft a suitable distance from the outer side of the adjacent standard; a pinion mounted on the shaft and arranged at the inner side of the standard adjacent the head, said pinion being operatively connected with the shaft; a washer intermediate the shaft-head and the adjacent standard; another pinion operatively mounted on the shaft and arranged at the inner side of the standard which is adjacent the aforesaid nut and having a hub which projects through and a suitable distance outwardly beyond the outer side of the said standard, said hub having a flat side; a washer mounted on the said hub between the nut and the outer side of the last-mentioned standard and internally conforming to and engaging the flat side of the hub, and racks rigid with the standards at one and the same side of the shaft, and the standards being slotted to accommodate the location and shifting of the shaft during a readjustment of the brackets.

5. The combination, in a combined school-desk and seat, with two laterally spaced standards; a pair of brackets which are arranged at the inner sides of the different standards respectively and adjustable up and down the standards; a shaft arranged horizontally and extending between the standards and through and supporting the brackets and through and a suitable distance beyond the outer sides of the standards, said shaft being provided at one end and a suitable distance from the outer side of one of the standards with a polygonal head and at its opposite end and at the outer side of the other standard being screw-threaded; a correspondingly threaded nut mounted on the threaded end of the shaft a suitable distance from the outer side of the adjacent standard; a pinion mounted on the shaft and arranged adjacent the head of the shaft and at the inner side of the standard adjacent the head, said pinion having a hub projecting outwardly through and a suitable distance beyond the outer side of the last-mentioned standard toward the said head and provided with flat sides; a washer intermediate the shaft-head and the adjacent standard and mounted on the said hub, said washer having a member which embraces and internally conforms to the shaft-head; another pinion operatively mounted on the shaft and arranged at the inner side of the standard which is adjacent the aforesaid nut and having a hub which projects through and a suitable distance outwardly beyond the outer side of the said standard, said hub having flat sides; a washer mounted on the last-mentioned hub between the nut and the outer side of the last-mentioned standard and internally conforming to and engaging the flat sides of the hub, and racks rigid with the standards at one and the same side of the shaft, and the standards being slotted to accommodate the location and shifting of the shafts during a readjustment of the brackets.

6. The combination, in a combined school-desk and seat, with two laterally spaced standards, two brackets arranged adjacent the different standards respectively, a shaft arranged substantially horizontally and extending between the standards and supporting the brackets, means whereby the shaft is raised or lowered according as the shaft is turned in the one direction or the other, and means whereby the shaft is secured in the desired adjustment, of a bar extending between the brackets and connected at the ends to the brackets, said bar being recessed longitudinally to receive the shaft.

7. The combination, in a combined school-desk and seat, with two laterally spaced

standards, two brackets arranged adjacent the different standards respectively, a shaft arranged substantially horizontally and extending between the standards and supporting the brackets, means whereby the shaft is raised or lowered according as the shaft is turned in the one direction or the other, and means whereby the shaft is secured in the desired adjustment, of a bar extending between the brackets and secured at the ends to the brackets, said bar extending along the shaft and around one side and over and under the shaft.

8. The combination, in a combined school-desk and seat, with two laterally spaced standards; two brackets arranged at the inner side of the different standards respectively, a shaft arranged substantially horizontally and extending between the standards and through and supporting the brackets, means whereby the shaft is raised or lowered according as the shaft is turned in the one direction or the other, and means whereby the shaft is secured in the desired adjustment, of a wooden bar extending between the brackets and connected at the ends to the brackets, said bar extending along and partially inclosing the shaft circumferentially of the shaft.

9. In a combined school-desk and seat, the combination, with two laterally spaced standards, each having on its inner side two upwardly converging guideways; a seat; brackets supporting the seat and engaging the forward guideways of the standards; a desk; brackets supporting the desk and engaging the rear guideways of the standards, and means for adjusting said brackets and for holding the same in adjusted positions, said means comprising two shafts, one extending between and bearing the seat-supporting brackets, and the other extending between and bearing the desk-supporting brackets, of a bar arranged between and connected at the ends to the desk-supporting brackets and extending along and partially around the shaft supporting the said brackets, and another bar arranged between and connected at the ends to the seat-supporting brackets and extending along and partially around the shaft bearing the last-mentioned brackets, said bars being so arranged relatively to the shafts that the latter are received within the adjacent portions of the bars.

10. In a combined school-desk and seat, the combination, with two laterally spaced standards, each having on its inner side two upwardly converging guideways; a seat; brackets supporting the seat and engaging the forward guideways of the standards; a desk; brackets supporting the desk and engaging the rear guideways of the standards, and means for adjusting said brackets and for holding the same in adjusted positions, said means comprising two shafts, one extending between and bearing the seat-supporting brackets, and the other extending between and bearing the desk-supporting brackets, of a bar extending along the shaft which bears the desk-supporting brackets and attached to the latter and provided with a recess which extends from end to end of the bar and receives the said shaft, and another bar extending along the shaft which bears the seat-supporting brackets and attached to the latter and provided with a recess which extends from end to end of the bar and receives the last-mentioned shaft, said bars being so arranged relatively to the shafts that the latter are received within the adjacent portions of the bars.

In testimony whereof I sign the foregoing specification, in the presence of two witnesses.

THEODOR KUNDTZ.

Witnesses:
C. H. Dorer,
B. C. Brown.