M. F. BAHSE & P. E. HAENDEL.

SCHOOL FURNITURE.

No. 180,824. Patented Aug. 8, 1876.

Fig. 1.

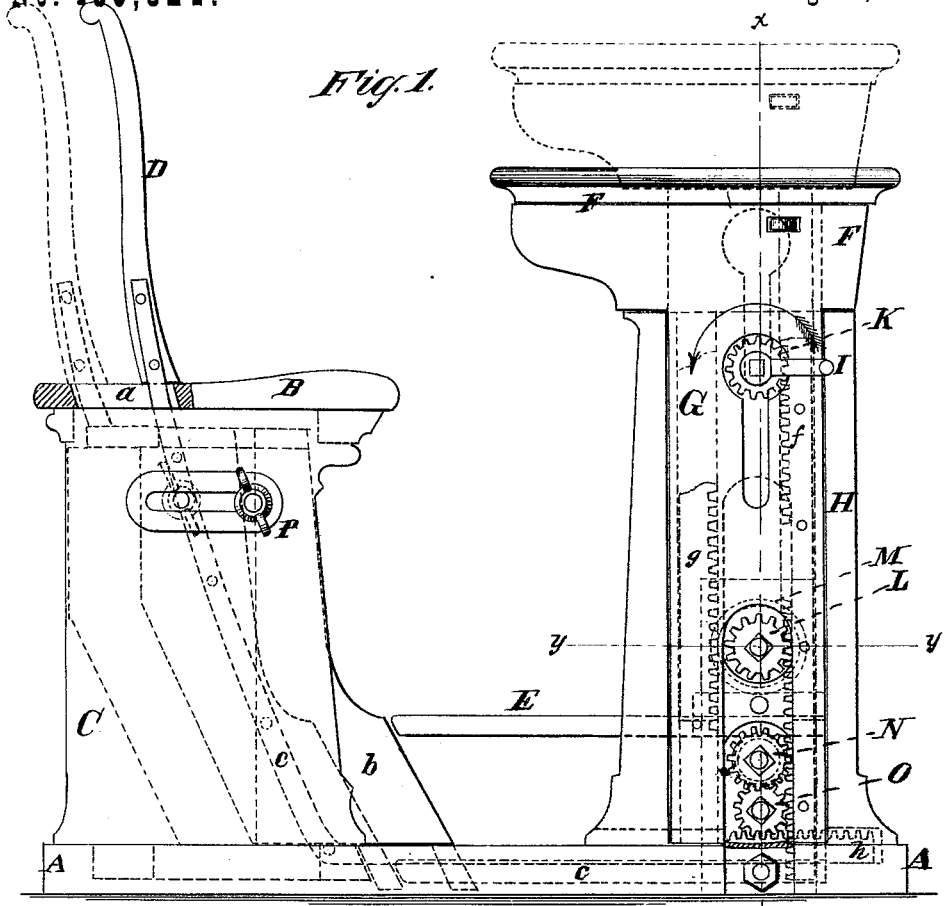


Fig. 2.

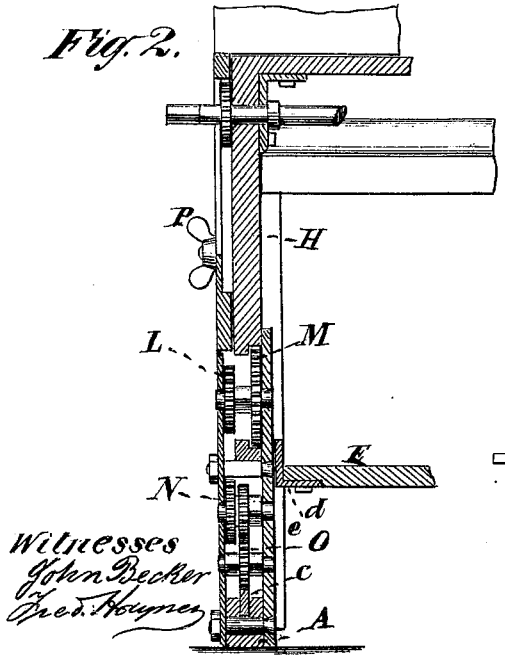
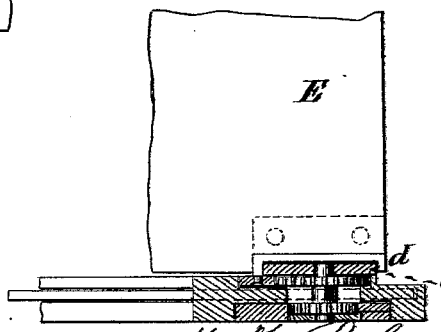


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

MORITZ F. BAHSE AND PAUL E. HAENDEL, OF CHEMNITZ, SAXONY.

IMPROVEMENT IN SCHOOL-FURNITURE.

Specification forming part of Letters Patent No. **180,824**, dated August 8, 1876; application filed July 10, 1876.

To all whom it may concern:

Be it known that we, MORITZ FERDINAND BAHSE and PAUL EDUARD HAENDEL, both of Chemnitz, in the Kingdom of Saxony, have invented an Improved Adjustable Combined Desk and Seat for use in schools and for other purposes; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

Our invention has for its object the supply of seats and desks, which may be proportionally adjusted in proper relation with each other to give the greatest degree of ease and convenience to those using such seats and desks, and also to avoid the sanitary evils arising from ill-constructed and badly-arranged seats and desks, the use of which frequently results in distortion of the human form in youth, and permanent deformity in age. There are, moreover, many manual operations, of which drawing and writing may be instanced, which are much more accurately and elegantly performed when the seat and desk are correctly arranged relatively to each other, in respect to height and horizontal distance. The want of seats and desks so constructed that they may be adjusted to persons of different height, and length of limbs, has been especially a serious defect in public schools, entailing bad habits in posture, and in writing and drawing, and often seriously injuring the health of pupils, compelled to sit in constrained and unnatural positions. These defects are removed by our invention.

The invention consists in a combined seat and desk, provided with a foot-board, the seat, desk, and foot-board being simultaneously and proportionally adjustable, by suitable mechanism, to suit various heights of persons, according to the general anatomical proportions of the human form.

Figure 1 in the drawing represents a side view of the invention, portions of the same being broken away to show different parts of the mechanism, and also showing different positions of adjustment. Fig. 2 is a section on the line *x x*, and Fig. 3 is a section on the line *y y*.

The desk, seat, and foot-board, together with the mechanism for operating the same, are all supported by a stout bottom frame, A, Fig. 1. The seat B is firmly attached to and supported by standards C, Fig. 1, firmly attached to the side bars of the bottom frame. The seat, therefore, does not move, but the back D of said seat, the foot-board E, and the desk F, are simultaneously movable and adjustable in different positions, relatively to each other and to the said seat B. Various mechanism may be used for simultaneously adjusting the said parts D, E, and F, but we prefer that hereinafter described. In adjusting the said back, seat, and desk, the seat moves horizontally, and the desk and foot-board move vertically, but in opposite directions. The desk F is attached to slides G, which slide in ways formed in the standards H, said standards H being rigidly attached to the side bars of the bottom frame A. The seat B has on each side thereof a slot, *a*, which slots permit the horizontal motion of the said back, said back being attached to sliding supports *b*, provided with sliding bars *c*, Fig. 2, at the bottom, which run in ways formed in the side bars of the bottom frame A. The foot-board E is rigidly attached to slides *d*, Figs. 2 and 3, which move on ways *e* attached to the inner sides of the standards H.

The mechanism preferably employed for the simultaneous and proportional adjustment of the parts in accordance with the general anatomical proportions of the human form is a system of racks and toothed wheels; but, as aforesaid, other mechanism may be employed.

I, Fig. 1, is a winch, which, applied to the axis of the toothed wheels K, one on each side of the desk, is used to turn said wheels in either direction, but which, when turned in the direction indicated by the curved arrow, acts through the other mechanism to elevate the desk, slide the back of the seat rearward, and lower the foot-board. The toothed wheels K mesh into vertical racks *f*, which are firmly attached to the slides G. The racks *f* also mesh into the toothed wheels L, which are affixed to the toothed wheels M, each pair of wheels being pivoted by common pivots to plates on each side of the standards H. The toothed wheels M mesh into racks *g*, Fig. 1, attached to the slides of the foot-board E.

The racks *f* also mesh into the toothed wheels N, which have on their pivots other wheels, which mesh into the toothed wheel O, said toothed wheel O meshing into the horizontal rack *h*, Fig. 1. The rack *h* is firmly attached to the sliding bar *c*, attached to the support *b* of the back D. It will be seen that the turning of the toothed wheel K must cause the simultaneous movement of all the other movable parts in the directions hereinbefore specified, and the relations of distance which the back of the seat, the desk, and the foot-board retain at the end of such movement are in the construction of the desk calculated so as to render them proportional to the general anatomical proportions of the human form. When it is desired to hold the back of the seat, the desk, and foot-board, the clamping-screws P fasten the sliding back, and, as all the parts move together, consequently prevent, through the media of the racks and toothed wheels, any movement of the desk or foot-board.

The top of the desk is preferably made to slide forward and backward, and adjust to an angle from the horizontal position; but we do not claim this as part of our invention.

We claim—

The combination of the desk, seat, and foot-board, with gearing, whereby they are simultaneously and proportionally adjusted to suit various heights of persons, according to the general proportions of the human form, substantially as and for the purpose set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

MORITZ FERDINAND BAHSE.
PAUL EDUARD HAENDEL.

Witnesses:
ERNST LUDWIG KUNZE,
CARL H. MÜLLER.