E. M. McNAMARA.

VENTILATING SYSTEM FOR SCHOOL ROOMS.

APPLICATION FILED APR. 5, 1915.

1,194,527.

Patented Aug. 15, 1916.

3 SHEETS—SHEET 1.

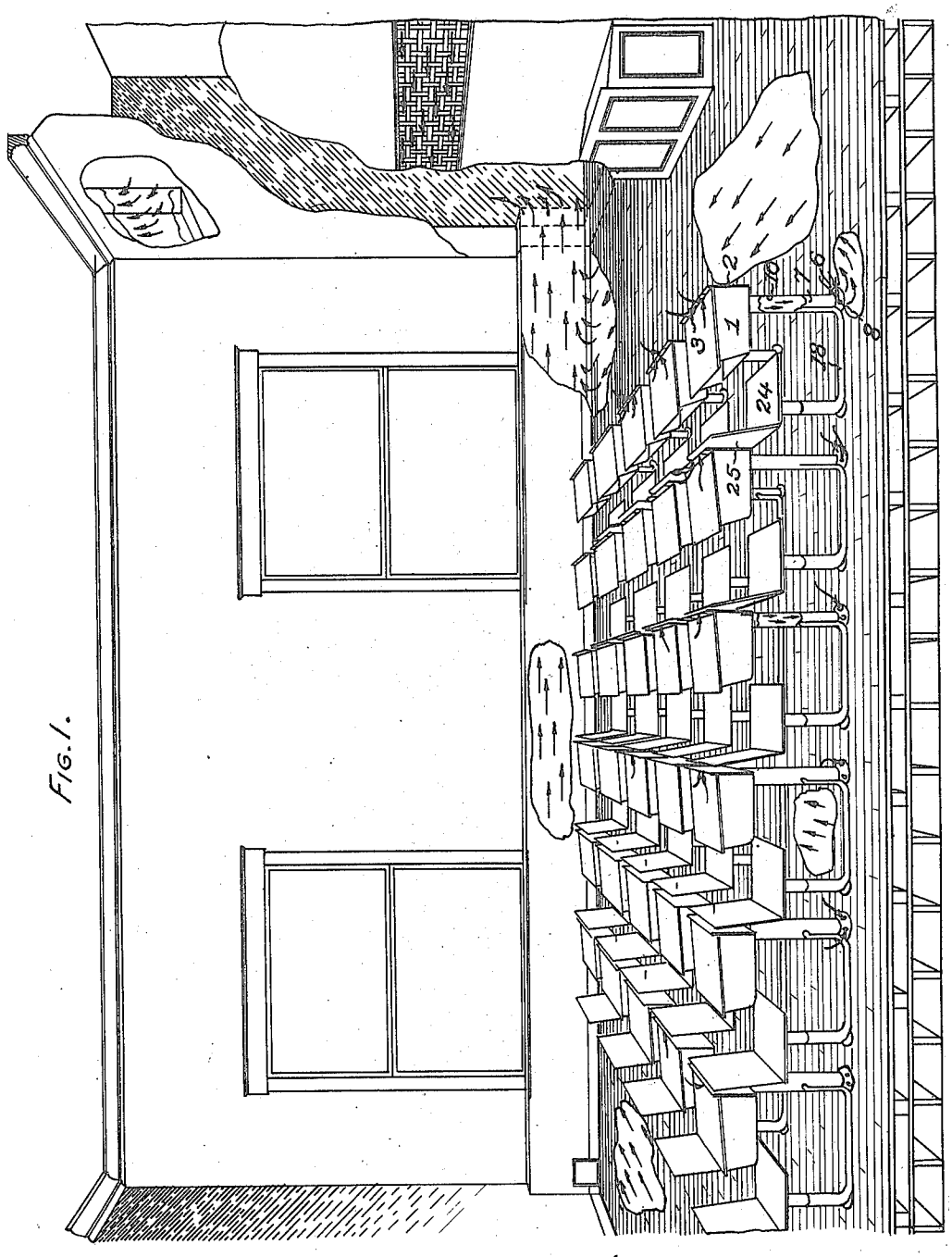


FIG. 1.

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3 SHEETS—SHEET 2.

FIG. 3.

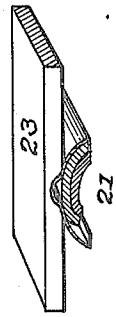


FIG. 2.

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3 SHEETS—SHEET 3.

FIG. 5.

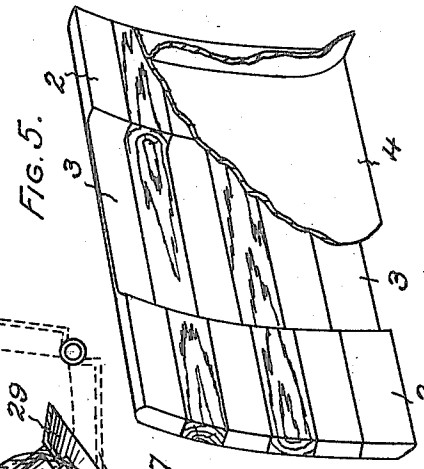
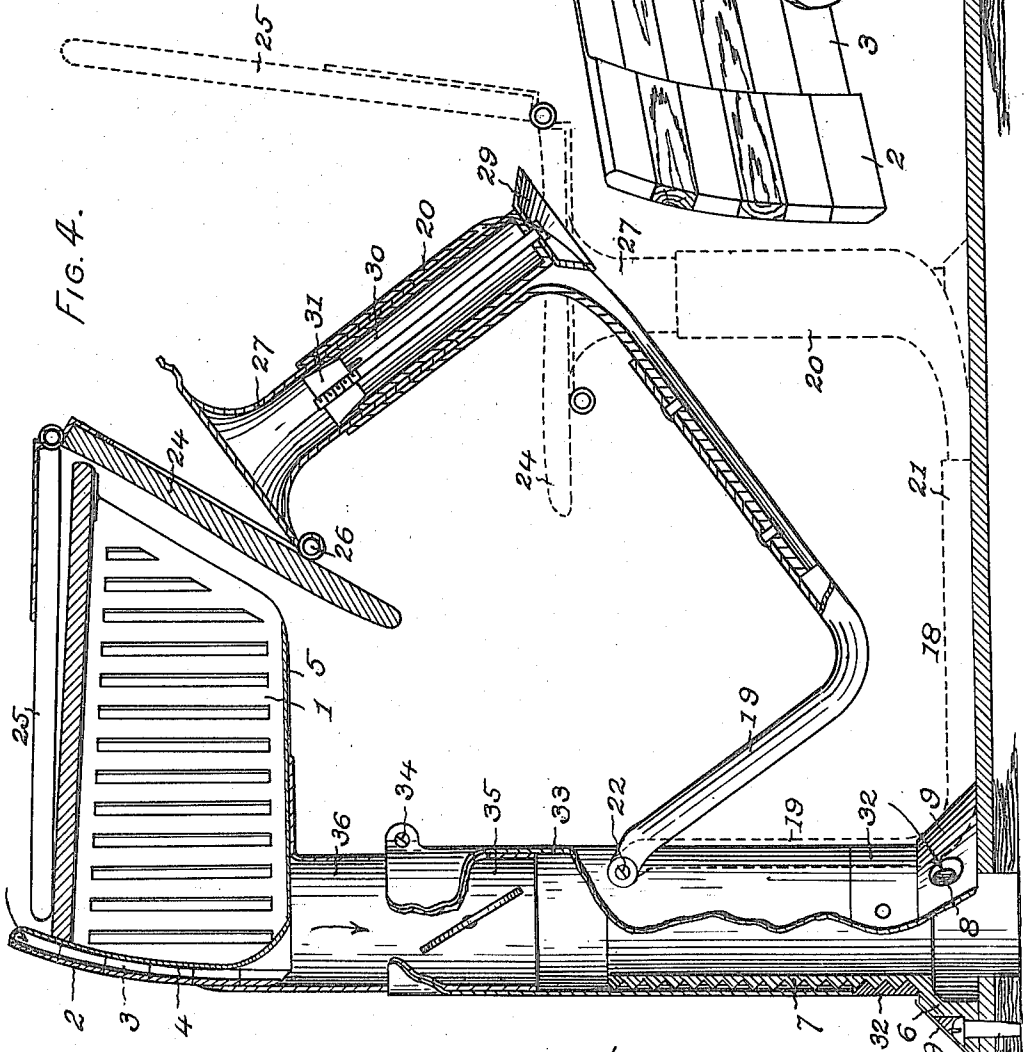


FIG. 4.



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UNITED STATES PATENT OFFICE.

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VENTILATING SYSTEM FOR SCHOOL-ROOMS.

1,194,527. Specification of Letters Patent. Patented Aug. 15, 1916.

Application filed April 5, 1915. Serial No. 19,104.

To all whom it may concern:

Be it known that I, EDWARD M. McNAMARA, a citizen of the United States of America, and a resident of Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Ventilating Systems for School-Rooms, of which the following is a specification.

This invention relates to a desk construction adapted for use in connection with the ventilating apparatus for school rooms, and has for its principal object to provide a simple and efficient structural formation and combination of the school desk and associated seat, in which the hollow pedestal of the desk constitutes an air duct or passage providing a coacting element of the ventilating means, in addition to the usual function of a desk support, and is adapted by its construction to provide means for local individual ventilation, with a direct passage for the exhaled air to an opening of a discharge duct without commingling with the air exhaled by other pupils and therefore preventing a general vitiation of the air of the room.

In the accompanying drawings: Figure 1, is a perspective view illustrating the general arrangement of a ventilating system, of the plenum type, for school rooms, and with the present improvement arranged as a portion of the system. Fig. 2, is a longitudinal sectional elevation of a combined desk and seat embodying the present invention, and illustrating its adaptation to the indirect system of ventilation, in which separate supply and return ducts conduct the air to and from the school room. Fig. 3, is a detached perspective view of the foot rest or stool of the desk structure. Fig. 4, is a longitudinal sectional elevation, illustrating the adaptation of the present improvements to the plenum system of ventilating rooms, shown in Fig. 1. Fig. 5, is a detached perspective view of the vertical outer portion or board of the desk structure.

Similar reference numerals indicate like parts in the several views.

Referring to the drawings, 1 designates the desk body having the usual slanting top board or portion, and a vertical outer portion or board 2, which in the present improvement is provided midway its length with an individual air passage or duct 3. In the construction shown in Figs. 2, 4 and 5, said air duct or passage 3 comprises a vertical channel in the inner side of the outer portion or board 2, with a plate or sheet 4 of metal or the like, closing the open side of the channel so formed. The plate or sheet 4 having a horizontal extension at its lower end, to constitute the bottom or web 5 of the desk body 1, as shown in Figs. 2 and 4.

6 designates the lower or base member of the hollow pedestal upon which the desk body 1 is supported. Said base member 6 is formed with a lower expanded portion for fixed attachment to the floor, and preferably of the conical form shown, and is provided with a tubular vertical stem 7, that is externally screw-threaded, for the purpose hereinafter stated. The central duct or passage of said base member 6 has communication with a main duct of the ventilating system so as to either receive air therefrom, or conduct air thereto, in accordance with the particular system to which the present invention is applied. A series of openings 8 are formed in the conical wall of the base member 6 aforesaid. 9 designates a correspondingly formed and orificed register collar surrounding said base member, and adapted by a turning adjustment, to regulate communication through the series of openings 8, between the interior of the school room and the central duct or passage of the base member 6.

10 designates the upper member of the aforesaid pedestal, provided with a horizontal flange 11, for fixed attachment to the bottom or web 5 of the desk body 1. In the construction illustrated in Fig. 2, the vertically depending sleeve portion of said upper member 10 fits over the vertical tubular stem 7 of the base member 6 aforesaid, and is internally screw-threaded to engage the screw-threaded exterior of the stem 7, so that by a manual rotation of the upper member 10 and attached desk body 1, vertical adjustment of said parts in one direction or the other can be attained. The central duct or passage of said upper member 10 has communication at its lower end with the central duct or passage of the base member 6 aforesaid while its upper end has communication with the before described air duct or passage 3 of the vertical outer portion or board 2 of the desk body 1.

12 designates a sleeve section or extension associated with the lower end of the hollow pedestal aforesaid, adapted to partition the lower expanded portion of the interior of the pedestal into a central air chamber or

duct which has longitudinal alinement with the main duct or passage of the pedestal to constitute an extension thereof, and into an annular chamber or duct 13, the walls of which contain the register openings 8, above described.

With the above described construction and association of parts, as illustrated in Fig. 2, the sleeve or partition 12, connects the duct or passage of the pedestal with an air trunk or duct 14 beneath the school room floor, while the aforesaid annular chamber or duct 13 has connection with a separate air trunk or duct 15, also beneath the school room floor, as shown. The construction is adapted for use in that type of ventilating systems in which air is positively forced into, and positively withdrawn from the room by a combined pressure and exhaust apparatus. In an exhaust system of ventilating in which the air is exhausted locally at or through the desks, the aforesaid sleeve section or extension 12 will be removed, and the lower end of each desk pedestal connected to common exhaust main or air duct or trunk beneath the floor as illustrated in Figs. 1 and 4.

16 designates a clamp sleeve surrounding the vertically depending sleeve partion of the upper member 10 of the desk pedestal, and clamped thereon at any required vertical adjustment by a clamping screw 17. Said clamp sleeve 16 acts as a pivot base for the seat connection now to be described.

18 designates a connecting frame having an approximately U form, and comprising a pair of vertical members 19 and 20 connected together in spaced relation by a lower horizontal and extensible connecting member 21, as shown. At its upper end the vertical member 19 has a yoke extension adapted for pivoted connection at 22 with the aforesaid clamp sleeve 16. The companion vertical member 20 is adapted for the attachment in an adjustable manner of the seat member of the desk, as hereinafter described in detail. The horizontal connecting member 21, aforesaid, is adapted to have close relation to the school room floor, and is preferably of a segmental form in cross-section, in order to offer a minimum amount of obstruction to the feet of the pupil.

23 designates a foot rest or saddle, straddling the horizontal connecting member 21, and adapted to support the feet of the pupil a distance above the school room floor.

24 designates the pupil's seat, associated in proper relation to the desk body 1 and having the usual hinged back 25. In the present construction the seat 24 has pivotal or hinge connection 26 with the tubular supporting sleeve or standard now to be described.

27 designates the tubular sleeve or standard above referred to, having an expanded upper end adapted to afford a substantial support for the seat 24 and to constitute one member of the hinge connection 26 aforesaid. The main portion of the standard 27 has the form of a cylindrical depending sleeve adapted to engage the above described vertical member 20 of the connecting frame 18, in an adjustable manner, and in order to suit different sizes of pupils.

With the above described arrangement and pivotal connection of parts, the connecting frame 18, seat 24 and back 25, are adapted to swing from their normal position of use, illustrated in full lines in Fig. 2, and in dotted lines in Fig. 4, into a position clear of the school room floor, illustrated in full lines in Fig. 4, with the seat 24 closing the mouth of the cavity of the desk body 1, and with the back 25 resting above the top of said desk body.

In the construction illustrated in Fig. 2, the vertical member 20 aforesaid, is externally screw-threaded for engagement with the correspondingly screw-threaded bore of the tubular sleeve or standard 27 aforesaid, and with an internal screw-thread for adjustable engagement with the stem portion of a floor-rest hereinafter described.

28 designates a lock sleeve or nut engaging the screw-threaded exterior of the vertical member 20 aforesaid, and disposed beneath the tubular sleeve or standard 27, to afford means for locking the parts at the required vertical adjustment.

29 designates the floor rest above referred to, and formed with a vertical screw-threaded stem 30 adapted to engage the screw-threaded bore of the aforesaid vertical member 20, and provide means for effecting an adjustment of the floor rest 29 in accordance with the vertical adjustment of the connecting frame 18 aforesaid and the associated desk parts with which it has connection.

In the construction illustrated in Fig. 4, the aforesaid vertical member 20, tubular sleeve or standard 27 and floor rest stem 30, have a plain tubular form and telescope one within the other, as shown. Said parts are held to the required vertical adjustment by an expander cone or block 31, coacting with longitudinally slitted ends of the sleeve 27 and stem 30, as usual in expanding fastenings of the present type.

The vertical adjustment of the desk pedestal may be attained by a detail construction of parts differing from that heretofore described in connection with Fig. 2, and as illustrated in Fig. 4, in which: 32 designates an internally screw-threaded collar or nut operatively engaging the external screw-threads of the vertical tubular stem 7 aforesaid, so as to be capable of vertical adjustment thereon by the manual rotation of said collar 32 in one direction or the other. 33

designates an intermediate sleeve having a smooth bore, the lower portion of which slidingly fits and is guided upon the screw-threads of the stem 7, aforesaid. At its upper end said intermediate sleeve 33 is provided with a clamping means 34, whereby its contraction is effected to firmly hold the depending sleeve portion 35 of an upper member 36 of the desk pedestal in proper fixed relation. Otherwise said member 36, is similar in formation to the upper member 10 of said pedestal heretofore described.

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

1. The combination, with an air trunk or duct; of a hollow pedestal located above the air trunk or duct and providing an air duct or passsage in communication therewith, and a desk-body surmounting the hollow pedestal and having an individual air duct or passage extending upwardly from the air duct or passage of the hollow pedestal to a point adjacent to the top of the desk body.

2. The combination, with air trunks or ducts; of a hollow pedestal having a lower or base member formed with a lower expanded portion in communication with one air trunk or duct and having a series of openings in the side walls thereof, and an orificed adjustable register collar surrounding the lower expanded portion of the lower or base member of the hollow pedestal, a sleeve section or extension providing communication between the other air trunk or duct and the air duct or passage of the hollow pedestal and a desk-body surmounting the hollow pedestal and having an individual air duct or passage extending upwardly from the air duct or passage of the hollow pedestal to a point adjacent to the top of the desk-body.

Signed at Chicago, Illinois this 1st day of April, 1915.

EDWARD M. McNAMARA.