

Improved Adjustable School Desk and Seat.

In order that school children may be preserved in health, and deformities in their persons avoided, it is necessary that their seats and desks should be adjusted to the several heights adapted to their statures; and this can be most readily done by so constructing the seats and desks that their heights may be varied, and thus each desk and seat fitted for the scholar that is to occupy it. Several plans have been devised for this purpose, but they have been objectionable from the want of stability, resulting from the play of the movable parts. The accompanying cut represents a seat invented by Amos Chase, of North Weare, N. H., which is provided with a brace in a way to make it remarkably firm, while it is at the same time very readily adjustable.

The seat is rigidly secured to the rod, *a*, which slides smoothly in the hollow cylinder, *b*, this cylinder being enlarged as its base and fastened firmly to the floor. The middle slat of the seat's back is lengthened downward and attached at its lower end to a projection from the rod, *a*, which passes through a vertical slit made in the cylinder, *b*, for that purpose; this slit being of sufficient length to allow the arm to slide up and down with the rise and fall of the seat. The seat is secured in any desired position by a set-screw.

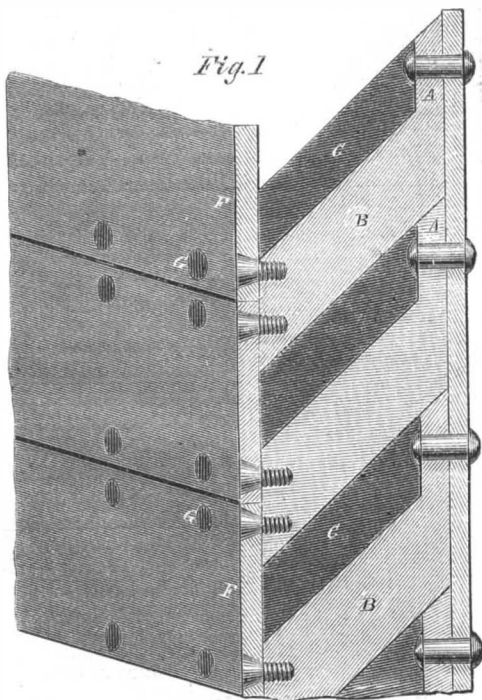
The desk is also made adjustable in height by a similar arrangement; the foot-rest being supported on an arm which is fastened to the sliding rod, and passes through a slit in the cylinder or stand.

Beside the facility of adjustment, the convenience of sweeping a room provided with these desks and seats is apparent.

This invention is secured by two patents, procured through the Scientific American Patent Agency, one dated Sept. 11, 1860, and the second June 11, 1861. Further information in relation to the matter may be obtained by addressing the assignee, N. C. Page, at North Weare, N. H.

SHIELDS FOR RESISTING SHOT IN SHIPS.

The accompanying engravings represent an invention for protecting the hulls of vessels, lately patent-



jute, or other fibrous material or compound, more or less yielding or elastic, and then cover in the whole with metal or wood.

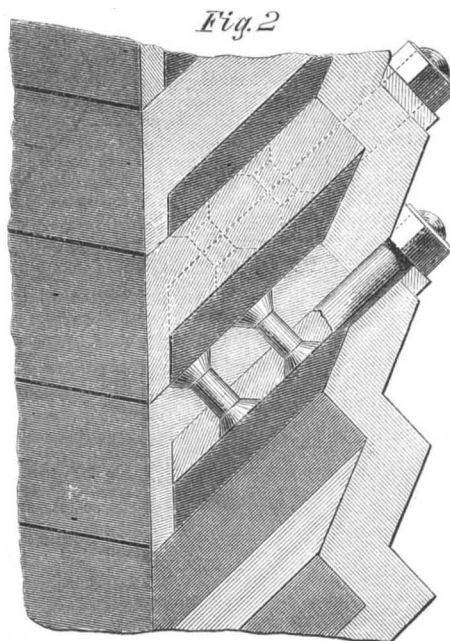
Fig. 1 of the above engravings is a sectional elevation, illustrating one part of the invention applied to the construction of a ship's side or other structure. A A are knees or bent portion of the louver plates parallel, or nearly so, with the side of the ship. B B are the louver plates, forming part of the knees, as shown. C is the packing between the plates. F F are plates forming the outside or front. G G are screws for securing the front plates to the louver plates; or the front plates and packing may be dispensed with.

Fig. 2 is a sectional elevation of part of a ship's side or other structure, in which the foundation plate



CHASE'S SCHOOL DESK AND SEAT.

is made of zig-zag form. The louver plates are arranged with their bent ends in the reverse direction to that described above, and secured to the ship's side by bolts, having a flat portion, which is riveted to the louver plates, and a round portion passing through the foundation plate, and held by screw nuts or keys. By arranging the louver plates in this manner a flush external surface is obtained without the employment of separate outside or front plates.



This invention has been illustrated and described in the London *Mechanics' Magazine*. Our opinions hitherto have been favorable to a rigid backing, for iron plates as being the best for resisting shot, but experiment is the only way to resolve all such questions. Mr. J. Chapman, in making experiments for determining the penetration of shot, found that 18 inches of cotton, packed in a box, was more effectual in resisting the shot than as many inches of timber.

STATISTICS OF BRITISH TAXATION.—From 1801 till 1811 the taxation averaged £57,000,000 a year, with a population of about 17,000,000, which is about £3, 7s. per head; in 1861 the revenue, in round numbers, is about £70,000,000, and the population about 30,000,000, which makes the rate per head £2, 6s. 8d. The former was a war period doubtless; but this did not make the pressure of taxation any easier to the community. In 1801, the estimated income of the United Kingdom was £230,000,000, and the revenue was £57,000,000, or, in other words, the taxation amounted to 25 per cent of the national income. At the present time, the revenue is about £70,000,000, and the income is upwards of £600,000,000, which leaves the taxation at about 11 per cent. These figures, however, convey but a faint idea of the immense improvement which has taken place in the condition of the people within the last fifty years; food and clothing are cheaper, the wages have been nearly doubled, while taxes have been removed from the necessaries of the poor, and placed on the luxuries and the incomes of the rich.



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FROM THE STEAM PRESS OF JOHN A. GRAY.

ed by Mr. W. L. Thomas and Colonel de Bathe, London. The patent is for resisting projectiles, and consists in constructing what the inventors term "compound louver plates or shields," fixed at an angle with the foundation plate, the spaces between the louver plates being filled up with wood, New Zealand flax