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## THE SCIENTIFIC AMERICAN,

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### Explosions.—Steamboat Law Enforced.

In the early part of this year there occurred quite a number of steamboat explosions on the western rivers, forcing the conviction upon us that they were due to dereliction of duty on the part of Inspectors. This opinion we expressed, with somewhat severe remarks, in several instances in our last volume. Recent investigations have confirmed our opinions, and it affords us pleasure to announce that the steamboat law of 1852, passed to ensure greater safety of life, has just been vindicated in the dismissal of a delinquent board of local Inspectors.

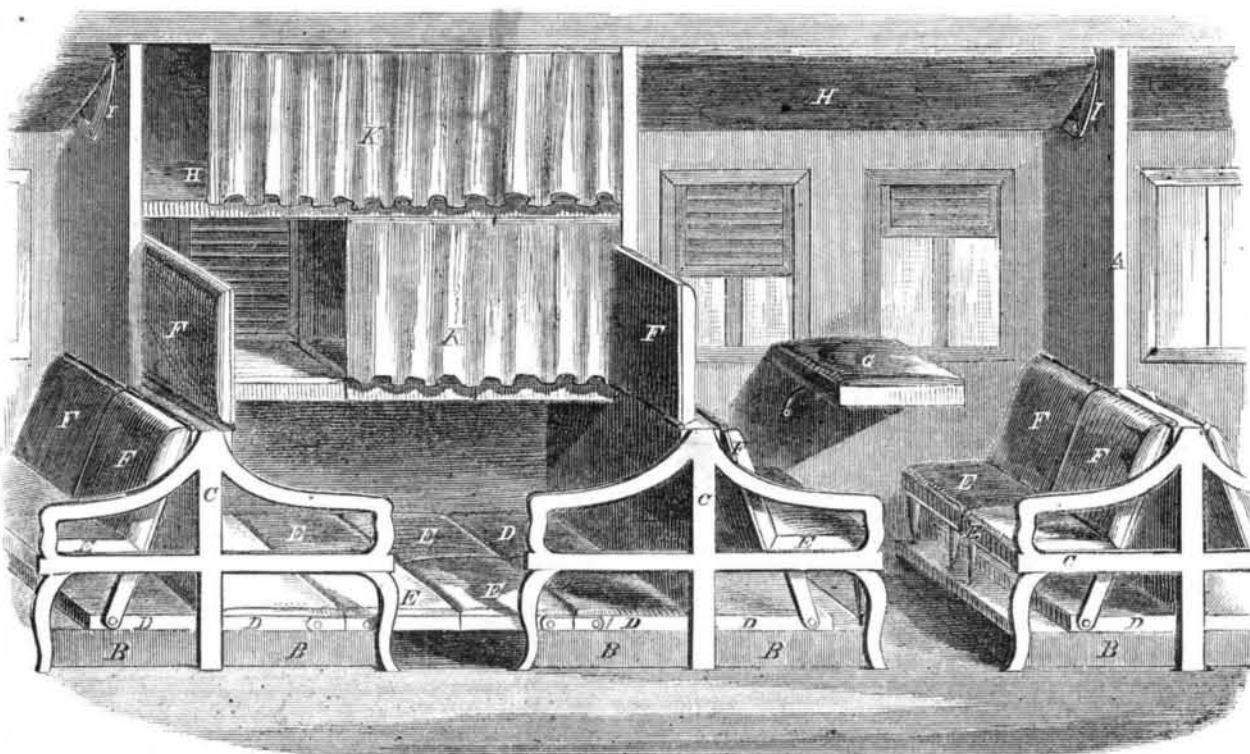
In the month of January last, the steamboat *Fanny Fern*, of Pittsburgh, exploded her boilers, while on a trip on the Ohio river, and the cause was proven to be a want of water in one of the boilers, while one of the engineers (J. M. King), was on watch. The local Inspectors, Messrs. J. S. Dickey and Andrew Watson, did not give the case a thorough examination; and although the outrage was very flagrant, they did not revoke King's license. The captain—Thomas Rogers—complained of them some months afterwards to the Secretary of the Treasury, who referred the matter to the supervising Inspector—Benjamin Crawford, of that district, who gave it a careful examination, and reported to the Secretary that the local Inspectors were highly censurable. Upon the rendering of his report they were dismissed from office, and Capt. R. J. Grace, of Pittsburgh, and Thomas Snowden, of Brownsville, have been appointed to fill their places. Mr. Crawford has endeavored to carry out the provisions of the law in its integrity, and we hope the decisive action of the Secretary of the Treasury will be a warning to other delinquent Inspectors, and that it will spur them up to increased vigilance in the performance of their responsible duties.

### Cure for Mosquito Bites.

According to an exchange, spirits of harts-horn, if applied immediately, constitutes a thorough antidote for the bites of mosquitos, or any poisonous insect or animal. Travelers should govern themselves accordingly, while every summer resort that is liable to a visitation of mosquitos, gnats, and other offensive and annoying insects, should keep constantly on hand a liberal supply of the antidote. Lime water is also believed to produce the same salutary effect, and if neither of the articles named can be obtained, any strong lye of wood ashes and water, may be resorted to with advantage.

A Brussels paper says that Dr. Andre Schleiernacher, one of the greatest scientific notabilities of Germany, died suddenly at Darmstadt, on the 11th July.

## WOODRUFF'S RAILROAD CAR SEAT AND SLEEPING COUCH.



For several years after the introduction of railroads in this country, the accession to the speed of traveling was so great, that passengers were satisfied with traveling in the day time only, but the business of railroads for the past few years has been gradually changing from day to night travel, particularly among business men who cannot afford to lose the time required for exclusive day traveling. Hence we took occasion in our issue of June 19th to set forth the great necessity of our railroad corporations furnishing the traveling community with sleeping accommodations, intimating that such a step on their part would add materially to the business and travel over their respective roads. Acting upon our suggestions many Western railroads have provided means to this end, by constructing the seats of their cars after the improved plan patented by T. T. Woodruff, by which they can be readily converted into comfortable sleeping couches, partaking in a great measure of the character and privacy of a state room.

Our illustration represents a perspective view of a portion of the interior of a railroad car, showing the seats in the position in which they are arranged when intended to be occupied by the passengers in a sitting posture, and also when changed to form double and single sleeping couches or berths. A A are a series of transverse partitions, arranged on either side of the car, at the required distance apart to admit of berths or couches being formed between them. B is a raised platform extending from the partition A, and its lower portion, C, next the longitudinal passage-way through the car, to the part between, allotted for the feet of the passengers, when sitting, upon which, next the partitions, are secured, horizontal cushioned frames or planks, D, to the ends and middle of which are jointed by connecting bars the seat bottom cushioned frames, E, to the surfaces of which are secured legs, which serve to support one edge of the said seat bottoms, when either in the position to be sat upon, as represented at the right hand of our engraving,

or in the horizontal lowered position to assist in forming a double sleeping berth, as shown at the left of the said engraving. When they are arranged to form seats, they are raised so as to bring their legs in openings next the edges of the raised platforms, B; and cushioned backs, F, hinged to the tops of the lower part, C, of the partitions, A, and to said partitions, A, are brought to the proper inclined positions in relation to them to serve as back supports. G are horizontal platforms projecting from the sides of the car, midway between the partitions, A, so as to form a rest or table for the passengers to rest upon when sitting down, and also in connection with the cushioned backs, F, immediately opposite, a single sleeping couch or berth, when the said backs are raised on their hinges so as to bring them on the same horizontal plane with the rests or platforms, G, to the edges of which they are firmly secured by suitable sliding bolts beneath. H are other longitudinal cushioned berth or couch platforms, arranged between the partitions, A, immediately above the single berth or couch formed by the table or platform, G, and backs, F. These berths or couch platforms, H, are suspended by curved bars, I, on pins or bolts inserted in the partitions, A, which admit of their being lowered to the suspended position represented at the left of our illustration, to form a sleeping berth or couch, or turned and raised immediately next the roof of the car when not employed in this capacity, and thus removed entirely out of the way of the passengers, and made to embellish rather than injure the interior appearance of the car.

To the roof of the car immediately above the edge of the berth or couch platform, H, and to the edge of this berth or couch platform, are attached horizontal wire rods which pass through wire rings on the edges of the ornamented curtains, K, which are suspended and extend downward the required distance to entirely protect the single berths from view when drawn over the wire, and thus insure privacy to their occupants; and when the berth or couch platform, H, is turned and elevated

these curtains can be folded above them so as to be entirely hid from view.

Cars constructed after this admirable plan are now in operation on the Buffalo and Erie, Cleveland and Erie, Cleveland and Cincinnati, Michigan Central, Michigan Southern, Ohio and Mississippi, Chicago and Galena Union, and Chicago, Fort Wayne and Pittsburgh Railroads, and have received the most unqualified approval of all who have enjoyed their advantages. The great beauty of this invention is the ease and little labor with which the seats are transformed into sleeping berths or couches, which in point of comfort are all that can be desired. Another important feature embraced by it is that should only a portion of the passengers desire to sleep, they may do so, without at all interfering with the comfort of the others; while the curtains, K, may be hung so that the occupants of the berths or couches may be partially or wholly secreted from observation, and as much at their ease as they would be in the berths of one of our best regulated steamers.

Any further information desired may be obtained by addressing the inventor and patentee, T. T. Woodruff, care of O. W. Childs, Salina, N. Y.

### "Vital Force or Momentum."

The Philadelphia *Ledger*, in a brief article on the above topic, seems to consider that vital force and momentum are the same thing. Mechanical philosophers make a distinction between them: thus, steam confined in a boiler is a *force*; the steam moving a piston is a *power*; the pressing weight of the steam multiplied into the velocity of the piston is its *momentum*. Electricity is a force, but as it does not possess gravity, we cannot apply the term "momentum" to it. The vital form of organisms—whether electrical or nervous—is imponderable, and therefore cannot be correctly called momentum. In many cases, it is positively necessary to make these distinctions.

THALES was the first natural philosopher.