

Improvement in Carriage Tongues or Poles.

The pole represented in the accompanying engraving is intended as an improvement and a substitute for the heavy carriage poles in ordinary use, the weight of which is galling to the necks of horses without a corresponding advantage in strength. This, it is believed, combines lightness and strength. The pole is formed of two pieces, or two separate poles connected and secured at the forward end by a metallic sheath or other means, and spread apart and thus held, by a block and strap between the front end and the splinter bar. Here they are fastened to a block and then curved downward and outward, diverging on each side to receive the bolt of the clips on the forward bolster. The downward curve is so calculated as to give the proper elevation to the pole, while the vehicle may be turned short without bringing the back ends of the pole in contact with the elliptic spring. An iron strap, the ends of which form eyes for the reception of the bolts passing through the ears of the clips, serve to strengthen the pole, as it extends beyond the splinter bar in one piece, the two branches being united. The device is recommended to the attention of our carriage makers.

Patented through the Scientific American Patent Agency, April 7, 1868, by V. N. Mitchell, who may be addressed for the purchase of rights, etc., at Concord, Cabarras Co., N. C.

TAMKIN'S AUTOMATIC HEAT DAMPER.

The ingenious device shown in the engraving is designed to control the draft of a fire, or rather the escape of the products of combustion, automatically, by the heat of these products. The principle is the well known one of the variability in the expansion of different metals by differing degrees of temperature.

The damper is the ordinary disk generally introduced into stovepipes, attached to a stem or axis to one end of which a pointer is attached. The other end may have a thumb piece, if considered necessary, as usual. On the pointer side of the pipe is affixed a dial or a sector with marks to indicate by means of the pointer the position of the damper, and if required, the degrees of heat. This is operated by a composite spring, one end of which is riveted to the funnel or pipe and the other end brought in contact with the plate of the damper. The spring is made of two metals of unequal expanding power, as copper and iron, that of the least expanding quality nearest the damper; one side of the damper, that against which the spring impinges, being slightly weighted.

The operation is thus: When there is little or no heat in the flue or pipe, the damper, from being slightly weighted on one side, will hang vertically, but as the heat increases the copper portion of the spring rapidly expands and the spring is curved, impinging on the damper, until, as the heat is sufficiently increased, the damper will be approximately closed, as it is not intended that no room whatever shall be left for the escape of the products of slow combustion. This invention is designed more particularly for stoves and other household warming apparatus, but may be applied to sugar houses, paper mills, etc., where regulation of the heat and the saving of heat is important.

Patented through the Scientific American Patent Agency, September 29, 1868, by George Tamkin, who may be addressed at 251 Water street, Newburgh, N. Y.

PROF. DOREMUS ON THE CREATION.

On the evening of the 9th instant, R. Ogden Doremus, Professor of Chemistry in the *Bellevue Medical College*, and in the *College of New York City*, gave at Lyric Hall, Sixth avenue, an interesting lecture on the "Creation according to Chemistry, Geology, and Astronomy, as compared with the Mosaic Record."

After referring to the motions of the earth, and the general belief that the earth consists of a hollow crust filled with molten matter, the lecturer reviewed the theory that the matter now composing the earth's mass was originally in a gaseous state and that by gradually cooling it has become first liquefied and subsequently solidified. The planets and the sun were also at the same period gaseous. The lecturer illustrated this part of the subject by some very interesting experiments with gaseous bodies, which were shown to be capable of change from gaseous to fluid states, and from that to solid form.

He claimed that the scriptural account, "the earth was without form and void," was as forcible an expression of the views of scientific men in regard to the chaotic period as could possibly be framed.

On the subject of the creation of light the lecturer dwelt at length, discussing its nature and the methods of determining the nature of the sources from which we obtain natural light. By the spectroscopic method it has been determined that so-

lar light is produced by the combustion of matters similar to those found upon the surface of the earth. More than this, forty stars have also been examined in the same manner with like results. The lecturer stated that while the earth was in a state of incandescence it was also self-luminous, and that its luminosity diminished with its temperature until now it shines only by reflected light. Professor Doremus also made some remarks upon artificial illumination, among which he stated that the recent experiments in France have established the fact that pure oxygen and hydrogen in their combustion give the strongest light of any yet artificially produced. He

evitably bringing the faces of the shoes in contact with the periphery of the wheels. In backing, the shoes will be held away from the tires by the reverse motion, as is obvious. The length of the slots in the plates mentioned are arranged with reference to the position of the friction roller and curved plate that the draft strain must be equally distributed, instead of being sustained wholly by the king bolt or the bolt of the doubletree.

Patented through the Scientific American Patent Agency by F. D. Ladenberger, who may be addressed for additional information at Glenbeulah, Sheboygan Co., Wis.

Sea Sickness.

An abstract of a paper upon the above subject in *The Medical Gazette*, of the 7th November, contains rules for the guidance, of those who are about to undertake sea voyages. The hearty meal system before going aboard, conflicts, to say the least, with the views of those whose opinions, based upon much experience in voyaging, ought to be valuable. We give below the rules, and would ask of our numerous sea-going readers their views of the subject:

"Those liable to be sick should make a hearty meal not more than two or three hours before going on board. They should select a spot as near as possible to the center of the vessel, and

lie down before she gets under weigh. The horizontal position should be rigidly kept during the whole passage. The person should be well covered, not only to protect from cold, but to shield from disagreeable sounds, sights, and smells. A stateroom should be selected as near as possible to the center of the ship, but not near the furnaces. In going to Europe, it is better to be on the starboard, and, in returning, on the larboard, which will be the sunny side. The following suggestions for the prevention of sea-sickness had proven efficacious:

"1st. Have every preparation made at least twenty-four hours before starting, so that the system may not be exhausted by overwork and want of sleep. This direction is particularly important for ladies.

"2d. Eat as hearty a meal as possible before going on board. "3d. Go on board sufficiently early to arrange such things as may be wanted for the first day or two, so that they may be easy of access; then undress and go to bed before the vessel gets under weigh. The neglect of this rule by those who are liable to sea-sickness is sure to be regretted.

"4th. Eat regularly and heartily, but without raising the head, for at least one or two days. In this way the habit of digestion is kept up, the strength is preserved, while the system becomes accustomed to the constant change of equilibrium.

"5th. On the first night out, take some mild laxative pills, as for example, two or three of the compound rhubarb pills. Most persons have a tendency to become constipated at sea, although diarrhoea occurs in a certain per centage. Constipation not only results from sea-sickness, but in turn aggravates it. . . The effervescent laxatives, like the Seidlitz, or the solution of the citrate of magnesia, taken in the morning on an empty stomach, are bad in sea sickness.

"6th. After having become so far habituated to the sea as to be able to take your meals at the table and to go on deck, never think of rising until you have eaten

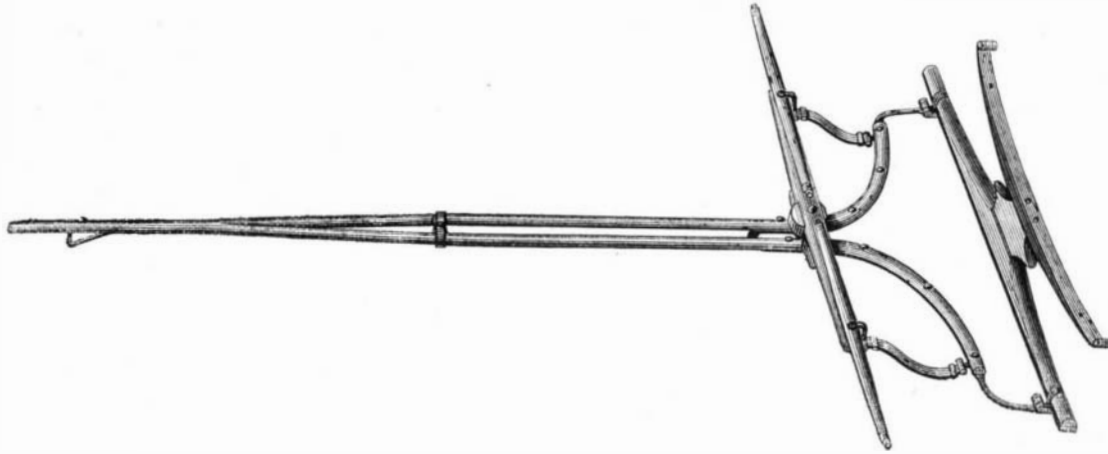
something, as a plate of oatmeal porridge, or a cup of coffee or tea, with seabiscuit or toast.

"7th. If subsequently during the voyage the sea should become unusually rough, go to bed before getting sick. It is foolish to dare anything when there is no glory to be won, and *something* may be lost."

We know from experience that these directions are generally sound, but if "the horizontal position should be rigidly kept during the whole passage" we suggest that the patient be strapped down to an oak plank or an amputating table. This practice would insure a continued rigidity all the way over.

GREEK FIRE.—What is commonly called Greek fire, consists of a solution of phosphorus, or of sulphur and phosphorus, in a very volatile liquid, the bisulphide of carbon, to which some mineral oil is added, to increase its incendiary powers. To extinguish the flame produced by this agent, throw upon the burning surface some wet or damp sand, ashes, sawdust, lime, or wet sacking or carpeting, any material by which the flame can be stifled by exclusion of air. No attempt should be made to remove the covering for some time after the flame has been extinguished. A powerful jet of water should be played upon the place afterwards.

A **QUEER** case of combustion occurred at Elk Grove, Wisconsin. Mr. Shane Morgan was threshing wheat with a machine, when the wheat ignited from the machine, and stacks, machine and appliances, were all consumed.

**MITCHELL'S PATENT CARRIAGE POLE.**

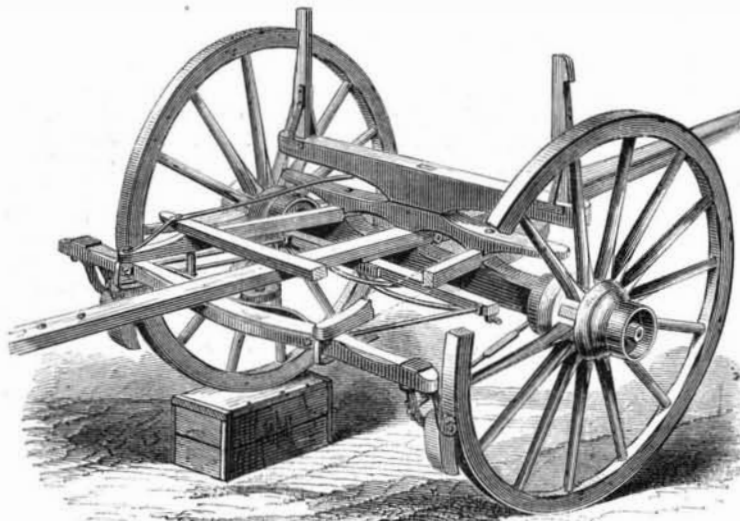
then traced the gradual progress of the formation of the earth and living beings up to the present period. On this head he remarked that the whole geological history of the world was a process of gradual preparation for the advent of mankind, and that the Mosaic record, which places man as last in the order of creation, was in exact accordance with the teachings of modern geology.

The present condition of the earth indicates a long duration, and he maintained that science shows our race to be only in its infancy.

The lecture is the first of a series of four to be delivered by Prof. Doremus, and was largely attended and attentively listened to.

LADENBERGER'S PATENT WAGON BRAKE.

For heavily loaded teams a brake for holding the load and relieving the animals is so much a necessity that almost all the conveyances of freight over uneven roads are provided with them. Usually they are operated by the hand or foot of the driver; but in critical positions his undivided attention



should be bestowed upon his horses, which is impossible when he must, in addition, govern the brake. Automatic devices have been invented to relieve the driver, but they have not always proved satisfactory in actual use. The engraving accompanying this description represents an improved plan which the inventor believes to be fully competent to meet the objections usual to the ordinary brake.

The doubletree over the front of the hounds is connected by a slotted plate through which a bolt passes in the usual manner, with a plate, also slotted, extending back to receive the king bolt that passes through the forward axle. The connection between the two is made by a pivot or by hinges. This latter plate is fixed to a cross bar and is connected by rods to a sway bar under the reach. To this bar are attached, by slings or stirrups, shoes or brakes, as seen in the engraving. The cross bar and sway bar are connected by rods and are kept back by two semi-circular springs fixed to the axle at their inner ends and to both these movable bars. A friction roller is pivoted to the under side of the reach just in advance of the sway bar, and impinges on a curved strap affixed to the sway bar so that it will be the means of taking up a portion of the strain of the draft and distributing it proportionately upon all the parts.

The bringing forward of the shoes or brakes is accomplished by means of the rods connecting the suspending stirrups and the axle, so that when the draft is released the springs throw the sway bar backward and the rounded heel of the shoe is brought in contact with the tires; the forward motion of the wheels in combination with this rounded portion in-