

seen a number of recommendations of the invention, from practical railroad engineers, who are using it. They speak of it in the highest terms, and say that it heats the water in the tender to 110°, and higher, with a saving of 25 per cent. in fuel. It adds but little to the weight of the locomotive, and the expense of construction is quite small.

#### Gear Cutter.

G. W. Bigelow, of New Haven, Conn., exhibits one of his machines for cutting gear wheels. All machinists should give it a careful examination. The blank wheel is placed on a spindle, the parts adjusted, and the machine started. It then goes on and performs the whole work without being touched by the attendant. In all other machines we believe it is necessary for the attendant to stop the machine for each tooth that is cut, and adjust it by hand for a new one. Mr. Bigelow's invention is wholly self-acting, works with mathematical accuracy, &c. Price \$400, and up, according to size. Patented 1855.

#### Works of Art.

The Palace is adorned with many of the noble pieces of statuary which beautified the World's Exhibition of 1853. But the present exhibition is enriched by a novelty, now for the first time shown, which is worth more than the price of admission to see. We allude to the "Descent of Christ from the Cross," by Carew, a celebrated artist of London. It is executed in alto-relievo, and its proportions are quite imposing. Nicodemus is supporting the body as it is being taken down from the cross, and near him are figures of persons sent by Pontius Pilate to superintend its delivery to Joseph of Arimathea. Joseph is represented holding the feet of the Savior. Near him, with head reclining upon the cross is John the Evangelist, and Mary the mother of Jesus. The two other Marys—Mary Magdalene and Mary the Mother of James,—sorrowful and weeping, complete the group. The drapery, postures, effect and execution are magnificent.

The circumstances under which this remarkable work is now presented to the public, are peculiar. The composition was originally executed, by Carew, under a contract with the late Bishop Murray, of Ireland, who ordered it for a cathedral, in Dublin. The price agreed upon was \$70,000. But the decease of the Bishop, and the inability of his successor to pay the money, left the work upon the artist's hands. It was then exhibited at the great World's Exhibition, in London, 1851, where it rivalled the best of the multitudinous collection there shown.

Subsequently it was taken down and forwarded for display at the great Exhibition here, in 1853, but when the boxes arrived, many of the pieces were found to be sadly broken, and the directors refused to receive it. So sadly was it marred that no artist could be found here who could restore it, although many essayed. At length Mr. Charles Innis, of this city, an American sculptor of considerable note, happened to come across the wreck, and immediately recognized it, to his unbounded surprise, as the work of his former master. Mr. Innis had been a pupil of Carew, and had, in fact, assisted in the construction of the work in London. He at once set about its restoration. Success has crowned its efforts, and the great sculpture now stands before us in all its original perfection. No copy has ever been made.

#### Apple Parer and Slicer.

We refer the reader to the advertisement of Smith's patent Parer, which appears in another column. It is on exhibition at the Palace and attracts a crowd by its rapid and curious movements.

#### Tobacco Pulp Segars.

A patent has been taken out in England by W. V. Wallace and B. L. Lowell, of London, for reducing those parts of tobacco leaves left after the finest portions are stripped off for segars—into pulp, by cutting them up in a machine, then submitting them to the action of steam in a close vessel. After this the pulp is made into sheets, by passing it through rollers from the pulp engine, or else through fine hair sieves, in the same manner that paper is made. The sheets of tobacco thus made from pulp are formed into segars and cheroots. Our segar makers can take the hint.

#### Recent American Patents.

**Brick Press.**—By Joseph A. Hill, of Greencastle, Ind.—Consists in a peculiar means of pressing the clay into the molds. Also in a new manner of feeding the molds underneath the pug mill, and discharging them therefrom, and in a peculiar shut-off board, whereby the descent of the clay into the molds is prevented until the clay is properly tempered and ground. Drawings would be required to explain the construction.

**Benzole Light.**—By Thomas Varney, San Francisco, Cal.—Refers to the burning of benzole for illuminating purposes, and consists in a vaporizing apparatus of a novel construction, by which all moving parts are dispensed with and simplicity attained. A very large evaporating surface is also obtained, by which the hydro-carbon and air become evenly mixed.

**Pulley Blocks.**—By J. M. Riley, of Newark, N. J.—Relates to a method of reducing the friction, by interposing metallic rings between the eye of the pulley wheel, and the bolt on which it turns. The rings revolve independent of each other, and greatly diminish the friction. The invention is applicable to all kinds of blocks.

**Seed Planter.**—By John F. Seaman, Walcott, Wayne Co., N. Y.—Consists of certain novel arrangements of shares, which open the furrow, the seed being dropped by the attendant, who touches a lever for that purpose, as the machine advances. The hills may be planted at any desired distance apart. The seed is covered by rotating shares, which are so operated and arranged as to clear themselves from weeds, etc. The seed is planted in a very uniform manner, is not scattered, &c.

**Seed Planting Prairie Plow.**—By Luther Robinson, of Cambridge, Massachusetts.—The sod is cut into strips by two knives, which project down from an oblong frame. Another knife, placed horizontally, cuts the strip underneath and loosens it from the ground. A corn planting contrivance now deposits seed upon the strip of sod, in its center. Two other knives now divide the sod again, and it is cut into three strips, the corn lying upon the central strip. Two mold boards invert the two side strips and throw them over upon the central strip, thus covering the seed between the grass surfaces of the sod. The grass soon decays and serves as manure for the seed. For breaking up the tough prairie soil this improvement appears to be well adapted.

**Farm Locomotive.**—By John Percy, Albany, N. Y.—This is a steam wagon or locomotive, for drawing plows, and doing all sorts of drudgery on farms. The improvement consists in certain novel means of turning the vehicle around, so that it may be guided and handled easily by one man. Also in a peculiar method of balancing the weight of the machine on the supporting wheels. It is intended to travel about on common roads and over uneven surfaces of ground like any other vehicle.

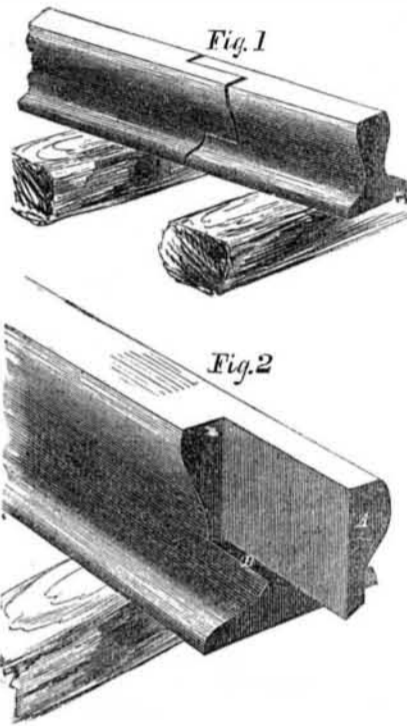
**Hubs and Axles.**—By John M. Riley, Newark, N. J.—This is an improvement in vehicles, relating to the attachment of the wheels to the axles. It consists of an anti-friction arrangement, composed of movable sleeves placed on the axle and interposed between it and the hub. There is a spring combined with these parts, which gives a certain degree of lateral elasticity to the hub, and thus prevents all injury from side jars and concussions. The improvement is simple, and not liable to get out of order.

**Tri-wick Candles.**—By B. D. Sanders, of Holliday's Cove, Va.—This improvement consists in forming a candle with three small wicks, placed at equal distances apart, forming a triangle, by which arrangement their flames form a hollow cone on the argand principle. A current of oxygen, is thus supplied to the center of the flame, perfect combustion insured, and a more brilliant light is obtained, as no smoke escapes, all the carbon being consumed. The flame of a common candle has a dark center, because the air which supports combustion, is only supplied at the outside, therefore there is considerable loss of combustible matter which passes off as smoke, or carbonic oxyd. This improve-

ment in candles is designed to remedy this evil and effect the benefits described.

**New Lock Joint for Railroad Rails.**—By J. R. Hilliard, of Paterson, N. J.—One of the principal causes of damage to rails, is the unevenness with which their ends come together. It is usual to employ a metallic seat, in which the ends of the rails rest, but this only in part overcomes the difficulty.

The object of the improvement herewith illustrated is to form the ends of the rails in such a manner that they will lock together, and present a continuous rail for the car wheels to roll upon. With this view they are made with tongue and groove, as shown in our cut.



Two ends thus formed being put together endwise, the tongue, A, of each will slide into the recess or groove, B, of the other, in such a manner that neither can be disconnected from the other by any downward pressure or by lateral pressure, and therefore when a number of rails are laid together in this way, they will form a perfectly continuous track for the support of which chairs, or other fastenings except spikes, are altogether unnecessary. Though this joint does not admit of the downward or lateral movement of either part without the other, it admits of a length of rail being taken up from or put in the track with as much facility as is afforded in any other track. This is done by simply removing the spikes from both sides of the joint, and prying it up. This joint admits of the expansion and contraction of the rails lengthwise without its security being in any degree impaired, and without making a complete break in the track at every joint.

Among other advantages are the following:

First, No movement of any rail in a downward or lateral direction can possibly take place. Second, evil disposed persons cannot take it apart or remove a rail unless previously shown the manner of its construction and of laying the rail. Third, The weight and lateral pressure of the engine and train confine both the ends of the rails which form the joint at the same time. Fourth, The disagreeable noise of clicking at the joints is entirely obviated. 5th, There is no battering down of the rails at the end, as each rail must remain in its own lock. Sixth, a great saving in labor for repairs will be effected, independently of the cost of broken chairs, or the wear and tear and breakage of engines and cars, caused by passing over sunken joints. Seventh, the working or settling of the sleepers under the joints will be effectually prevented, as there is no more tendency of the rail to settle or spread at the joint than at the center or other portions of the rail. Eighth, it renders the running of trains far more safe, by furnishing a permanent and well secured track which is equally as strong, substantial, and durable at the joints, as in other portions of the rail, and will not be improved by expansion and contraction. Ninth, when a rail is worn on one side, it can be changed end for end, as all the ends are formed alike.

Address the inventor, as above, for further information. Patented in the United States May 13, 1856. Also patented in England through the Scientific American Agency. Now on exhibition at the Crystal Palace.

**Steam Horse, or Farm Locomotive.**—By John Robingson, of New Brighton, Pa.—This is a steam wagon or locomotive of peculiar construction, so arranged that it will travel about on common roads, over fields and meadows, at the will of the farmer, dragging his plows harrows, seeding machines, etc. In short, doing all the hardest labor of the farm, besides sawing wood, driving the thrashers, straw cutters, churns, &c. The genius of the inventor of this improvement is very prolific. Several patents for other inventions have been granted to him within a few weeks past, and within a year we have prosecuted for him nine distinct applications.

#### Colonization of Mexico.

This Republic appears now to be under an able and patriotic government, from President Commonfort down to the humblest officer. The old tyrannic laws against all religions but that of the State church, have been abolished, and every man is allowed the freedom to worship according to his own faith. A law was also passed on the 10th of May last, to encourage colonists to settle in the most fertile and pleasant parts of that country, and agents have been appointed by the government in this city, to give immigrants all the necessary information and free passports. A territory has been established between Vera Cruz and Jalappa, where the soil is fertile, and the climate healthy, for four colonies. Each colony is to have 11,000 acres of land,—1000 for a village, and 10,000 for cultivation. Each colonist is to receive 100 acres, and a building lot. For the first three years, the colonist pays no duty, nor contributions of any kind; and he can introduce, free of duty, all kinds of grain and agricultural implements. From Vera Cruz, all colonists will also be transported, free of expense, to the colony, and each family will receive a milch cow, on arriving at their destination.

These are very liberal provisions for inviting colonists to settle in that country, and afford evidence of very enlightened views on the part of the present powers in authority. The great mineral wealth and natural resources of Mexico, under a wise, liberal and enterprising government, and a free, intelligent, and industrious population, would soon elevate that Republic to a high position. It has hitherto been the sad fate of Mexico to be torn by intestine factions, and the contests of contending chieftains for power and spoils. We hope these contests are gone forever, and that the people will labor in union and harmony to develop the exhaustless resources of this ancient center of inexhaustible wealth. The provisions made for colonization, are liberal and politic. A colony of industrious emigrants, always proves a benefit to any country, and those from the United States would introduce improvements of the very kind most required,—such as public schools, an improved agriculture, new inventions, &c.

Three crops of Indian corn are raised around Jalapa in one season; all kinds of grain and fruit are raised. Cattle are abundant and cheap; the forests are filled with valuable timber,—the copal, the india rubber, the rosewood and mahogany trees grow there, as well as the pine and the hickory. The cochineal insect which yields the crimson dye for fine woolen shawls, is found there. Silver, gold, copper, iron, mercury, lead, zinc, sulphur, and coal are abundant, but for want of skillful labor, are mostly lying dormant. We hope Mexico is destined to see better days than it has done heretofore.

#### Boiler Explosions

On the 1st inst. a locomotive exploded at the Bolton depot on the Northern Central R. R. Md. The fireman was killed and the engine thrown 30 feet from the track.

The boiler of a portable engine exploded on the 2nd inst. at the Ohio State Fair, killing fourteen persons and wounding several others.

No less than 85,792,030 pounds of tea were exported from China in 1855.