RECENT INVENTIONS.

An improved heater and feeder for steam boilers has been patented by Mr. Frederick A. Meyer, of New York city. The object of this invention is to provide a steam boiler especially designed for the quick generation of steam and to be set in and used in combination with heating and melting furnaces, more especially those furnaces that are operated with liquid fuel. With a boiler and its immediate connections, constructed and arranged according to this invention, a high pressure of steam can be quickly produced and easily maintained.

Mr. Paul Bitterlin, Jr., of Paris, France, has patented a compound for etching vitreous surfaces. This invention consists in mixing with hydrofluoric acid a portion of any finely-divided material—such as the natural silicates, emery, etc.—which will be attacked by it. This decreases the energy of its action, and causes it to act with more uniformity and regularity upon the vitreous surface; or, if it is desired to vary the etched surface and obtain engravings of the most varying character, the inventor mixes therewith some finely-divided material, such as fluoride of calcium, oxide of zinc, etc., which the acid will not attack.

A novel can opener has been patented by Mr. Frank Sharp, of Socorro, Territory of New Mexico. This invention consists of a bar having a curved point at one end and a handle at the other. Upon the bar there is a sliding knife adjusted by a screw arranged above and parallel with the bar and journaled at the ends in the handle and in the end of the bar which is turned up for this purpose. The screw is provided with a milled thumb wheel near the handle for convenience in turning The movable knife is adjusted to suit cans of different sizes by turning the screw.

Mr. Elmer H. Slagle, of Algona, Iowa, has patented a device for supporting boots in boot boxes by means of which the annoyance experienced by retail boot dealers by the falling over and mixing up of the boots in the boxes after one or more pairs have been sold may be overcome.

An improvement in apparatus for the manufacture of starch has been patented by Mr. Anthony Atkinson, of New York city. In the manufacture of starch the final settling operation is accomplished in long troughs or tanks, through which the starch water is run, so that the starch may settle while the water escapes at the discharge end of the trough. This invention relates to these troughs, the object being to obviate the difficulty experienced from the uneven accumulation of starch, prevent waste of starch, and to insure a uniform current.

An improvement in farm gates has been patented by Mr. Daniel Spencer, of Albion, Mich. This invention relates to that class of gates which are pivoted and adapted to be swung to a horizontal position, enabling the gate to be opened when there is snow upon the ground.

Messrs. Ernest B. Walter and John P. Voelker, of New York city, have patented an improved window screen in which a screen is attached at one end to the sash and at the other to a hollow roll having a spring on the inside, so that as the sash rises it will unroll the screen to cover the opening made, and as it comes down the spring will wind up the screen on the roll.

An improved illuminated mirror which reflects light-rays upon the face of the person looking into the mirror, whereby the image of the face will be reflected very clearly and distinctly in a dark or darkened room, has been patented by Messrs. Peter Loth and Jules Sindic, of New York city. The invention consists in a mirror surrounded by a beveled frame of ground glass fitting in the front of a box lined with reflector mirrors and containing a lamp or gas light, the rays of which are reflected by a small reflector on the inner surface of the mirror, upon a larger reflector in the rear part of the box, from which larger reflector they are reflected through the beveled glass upon the face of the person looking into the mirror.

A novel water closet disinfecting device has been patented by Mr. Dwight Warren, of Winsted, Conn. The invention consists in a tube suspended on the side of the water closet or urinal bowl, and containing a disinfecting compound, a part of which is dissolved by water entering into the tube through a very small aperture near the lower end every time the bowl is flushed with water. Both the lower and upper ends of the tube are closed, the upper end being preferably closed by a cup containing vaporizable disinfectants or perfumes, and is covered by a perforated cap.

Mr. Frederick A. Meyer, of New York city, has patented an improved liquid-fuel injector, which consists of a double hemispherical covered vessel, having a steam space between its outer and inner shell, provided with an internal diaphragm to effect the better mingling of the steam and liquid fuel, with a receptacle for receiving the excess of oil or liquid fuel that may at any time enter the injector, and provided with a relief pipe for the escape of such of the oil that is there vaporized, and provided with suitable discharge nozzle, with valved oil and steam supply pipes, and with an adjustable steam pipe that controls by valvular action the admission of the liquid fuel or oil into said injector.

An improved refrigerating bedstead has been patented by Mr. Charles P. Jackson, of Chicago, Ill. This refrigerating bedstead is for cooling, refreshing, and purifying the air in a sick chamber. It consists in a bedstead having an ice box held a suitable distance above it, directly below which ice box a drip pan is suspended, provided with inwardly inclined flanges to prevent the water from splashing or flowing over the sides of the pan when the bedstead is moved suddenly, and with tubes for carrying off the drip water.

Mr. Dwight Warren, of Winsted, Conn., has patented a disinfecting compound consisting of sulphate of alumina, permanganate of potash, and bichromate of potash, combined in certain definite proportions.

An Ambidexterous Surgeon.

In an interesting obituary notice of Dr. Pancoast, the celebrated surgeon of Philadelphia, the *Times* of that city says:

The great point in his career was his skill as an operator. He was ambidexter, and could perform operations of the most delicate intricacy with his left hand which were beyond the skill of others using the right hand only. It was, in part, the extraordinary facility with which he could employ both hands at one time which made him so successful in the department of plastic surgery. By the removal of strips of flesh from the forehead and elsewhere, he has formed no less than a dozen noses for persons who, either through accident or disease, were without them. There is a woman standing in the Callowhill Street Market for whom he made a nose twenty-two years ago, and no one can detect it now from nature's own best handiwork. He was the first to show that after the eyebrow has been destroyed a good looking substitute can be made by raising a flap of the scalp with the soft, drooping hairs of the temple, and giving it what is termed a "long pedicle" to run into a bed cut for it in the brow. He also furnished maimed humanity with eyelids and ears. So far did his fame as an operator extend that one of the things which visiting foreigners marked down as of the greatest interest in Philadelphia was "to see Dr. Pancoast operate." His hands looked clumsy, but he could take up a large knife, as on the occasion of the visit of the Japanese party some years ago to see him perform amputation at the hip-joint, and the next moment he could take the finest needle and operate upon an eye. He was among the first to resort to the section of the facial nerve for the relief of neuralgia. He was remarkably successful in operations for cataract, and early improved upon the operation of "couching" by complete extraction. In the treatment of strabismus, or squint, he was in his day unrivaled. At the same time, the record of his larger operations, from lithotomy to amputation at the hip-joint, is one of extraordinary brilliancy. He was never systematic, and was not at all particular about his selection of instruments. On several occasions he performed delicate operations with an ordinary penknife, beause other instruments were not at hand.

Town-building Industries.

One of the noteworthy and encouraging features of American industrial life is the very common development in out-of-the-way places of thriving manufacturing towns, based for the most part on new inventions. It often happens that a wide-awake mechanic, young business man, or farmer, utilizes some local advantage for the manufacture of a simple article which he has invented and patented, starting a small shop where a man of large capital would never think of locating. One successful invention almost invariably paves the way for more of the same sort; while the creation of a new center of productive industry, however humble, attracts thither, of necessity, the more active minded, both of those who want to work and those who want to have work done, in the region round about.

In this way there grow up in the most unexpected places manufacturing towns which attain not unfrequently a world-wide reputation through or by means of their peculiar products.

The busy little town of Waynesborough, Pennsylvania, is in many respects an illustration of this feature of American life. The names of fully one-fourth of its entire population are on the pay-rolls of one firm, Messrs. Frick & Company, whose growing establishment for the manufacture of agricultural engines and railroad machinery is the industrial mainspring and support of the place.

The farm engines, traction engines, grain separators, and sawmill machinery are making a wide demand. Recently fourteen separators were dispatched at one time, and a day or two later thirteen engines and several sawmills were shipped by one train.

The Elephant in the Middle Ages.

Matthew Paris mentions that the Soldan of Babylon, Malek el Kamel, sent an elephant as a rare present to the Emperor Frederic II., in the year A.D. 1229 (Sir Frederick Madden's edition of the "Historia Minor," vol. ii., p. 314). But it was not until the year 1255 that the first elephant was seen in England. This was presented by the King of France to King Henry III. The chronicler, John of Oxenedes, chronicles the arrival of this animal at London, and declares that it was believed that none had ever been brought to England before. Of the elephant, Matthew Paris made a very good drawing, the original of which is still extant among the Cottonian manuscripts in the British Museum (Nero, D. I.); and an equally good, but smaller, drawing is given by John de Walingeford, in another Cottonian manuscript (Julius, D. VII.). The beast arrived at Sandwich, and was conveyed to the Tower of London, where the sheriffs had been directed by royal precept to build a house for it, 40 feet in length and 20 feet in breadth, taking care to let the building have sufficient strength to be fit for any other purpose. The animal itself was ten feet in height from the top of the back to the ground, and was ten years old. It lived on to the 41st year of Henry III., A.D. 1257, in which year it appears from the "Chancellor's Roll" that for the maintenance of the elephant and its keeper, from Michaelmas to St. Valentine's day, immediately before the animal died, at the age of twelve years only, the charge amounted to £16 13s. 1d. The name of the keeper is recorded to have been John Gooch. Many chroniclers mention this elephant—(*e. g.*, Matthew Paris, iii., 334; Annals of Burton, i., 329). The "Majora" of Matthew Paris states (vol. v., p. 489) that no elephant had ever before been seen on this side of the Alps, but that statement will hardly agree with the record of the elephant presented to the German Emperor in A.D. 1229, as already mentioned. Crowds of people went to see the king's elephant, according to this author, and we may well believe it. The drawings seem to indicate an Indian rather than an African elephant, but it is difficult to determine the question.

Correspondence.

Self-acting Car Couplers.

To the Editor of the Scientific American:

In an article entitled "Railroad Inventions Wanted," by W. S. Huntington, published November 19, 1881, an automatic coupler for freight cars was mentioned. Soon after seeing the article I designed an automatic coupler that I claim fills the requirements set out in that article to the letter, and so say scores of competent judges. Yet when I show it to railroad officials, those in authority who might adopt it, they condemn it at once and that without hardly looking at it, and without showing one single fault in it—just condemn it on general principles. And when I ask them why it won't work, their reply invariably is (in sum and substance) that "You can't make an automatic coupler that will work on freight cars. They have been trying that for the last twenty-five years, and they never could make it work. Self-couplers will do for passenger cars, but not on freight cars." That is about the way they all condemn it. The fact of the matter is there is no invention in existence that meets with as much opposition as an automatic car coupler, and no inventor will ever make a fortune out of an automatic car coupler until the law compels the railroads to use them. It will be a heavy expense to the railroads to adopt them, and that is the reason "you can't couple freight cars automatically."

Terre Haute, Ind. R. K. WOOD.

Resistance of Dynamo Machines.

To the Editor of the Scientific American:

Some time ago Mr. Weston and I had a discussion in your columns regarding the proper resistance of dynamo machines. Mr. Weston then claimed that low resistance machines were wrong in principle and impractical. Mr. Edison then claimed by his practice that a low resistance machine was the best form. His experiments have now resulted in a practical machine, which is running in London, having a resistance of one two-thousandth of an ohm. On this resistance he is able to convert 125 horse power of energy into electricity with a minimum loss, and to avail himself of 97 per cent of the electricity outside of the machine.

FRANCIS R. UPTON.

Menlo Park, N. J., March 28, 1882.

[The results here given are certainly very remarkable.—ED. S. A.]

Iron Ore in North Carolina.

Chattanooga, Tenn., is rejoicing in the discovery, in Mitchell County, N. C., of two veins of magnetite of superior quality, one eighteen feet, the other thirty-four feet wide. The veins were cut while tunneling for a railway on the property of the Cranberry Iron Company. This discovery insures, it is thought, an abundant supply of steel-making ore for the Chattanooga district.

Earthquake in Central New York.

Two distinct earthquake shocks were felt at Amsterdam, N. Y., and throughout the adjacent towns, April 2. Houses were considerably shaken. The first shock was felt between six and seven o'clock in the morning; the second and severer shock at 8:10.

CEMENT FOR GLASS AND METAL.—Every one who uses brass letters on glass windows, and knows how often they tumble off from unequal expansion, or from the too energetic efforts of window-cleaners, will be glad to have the following recipe: Litharge, 2 parts; white lead, 1 part; boiled linseed oil, 3 parts; gum copal, 1 part. Mixed just before using, this is said to form a quick-drying and secure cement.

WALNUT TREES SHOULD NOT BE TRANSPLANTED.—A correspondent of the Detroit *Free Press*, anent the undertaking of a man in Michigan to reset 1,000 black walnut trees for commercial purposes, says that they cannot be transplanted and retain their vigor. They should be grown from the nuts. He has made experiments by both transplanting and raising from the seed, which has convinced him that the latter is much the preferable way.

A ZOOLOGICAL NECROPOLIS.—A company, styled the Zoological Necropolis Company, has been formed in London. Its business is to provide "a burial place for pet animals, dogs, cats, and little birds."