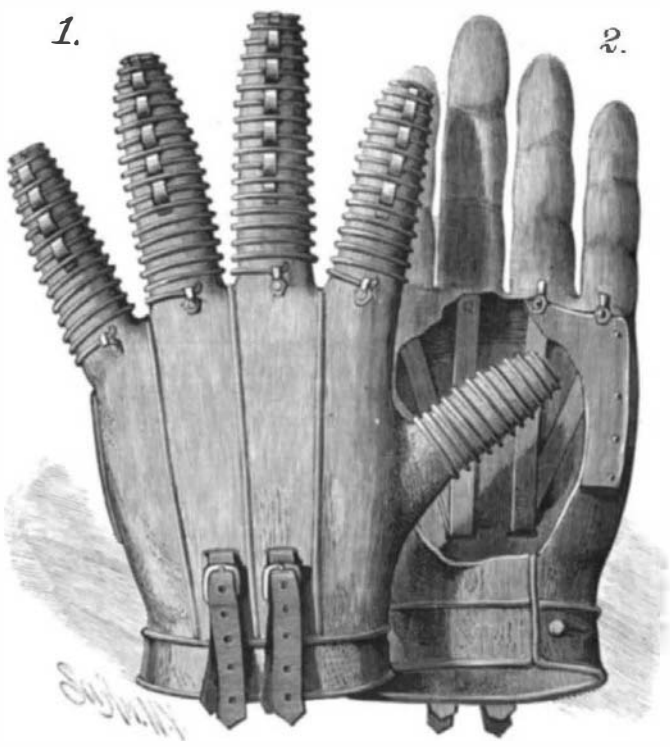
afterward give a coat of paint, so that he may finish the puttying the next day; now it has been puttied twice before the first has had time to dry, and consequently will show every place where there is a nail or screw, because no precautions have been used against it.—*Carriage Monthly.*

### NEW HUSKING GLOVE.

The engraving shows a device for protecting the parts of a glove most exposed to wear in husking It is applied to a glove of ordinary make, and consists of a coil of wire surrounding each finger and the thumb of the glove. The coils are fastened at the front and back by means of small metal clips riveted to the glove. These clips are sustained by straps fastened to the same rivets, and extending down the back of the glove to a point near the wrist, where they pass out through slits in the glove, and are received by buckles attached to the wrist portion of the glove, so that the straps can be tightened or loosened to sustain more or less of the strain on the fingers and back of the glove.

This invention was lately patented by Mr. J. F. Glidden, of De Kalb, Ill.




GLIDDEN'S HUSKING GLOVE.

### Arsenic and Vanadium in Caustic Soda.

Since caustic soda is no longer exclusively made from crude soda and lime, but is also produced directly from red liquor, the product is often contaminated with undue proportions of chlorides, sulphates, carbonates, even nitrites, and sometimes cyanogen compounds. The author has now also met with arsenic and vanadium in caustic soda. The latter impurity may be disregarded, being rare and very minute; but the former is more serious. A sample of this caustic soda, dissolved in dilute sulphuric acid, and the solution tested directly in Marsh's apparatus, yielded a strong arsenic mirror. Assay by means of precipitation with hydrosulphuric acid, etc., yielded 0·16 per cent of arsenic acid. The same sample contained also 0·014 per cent of vanadic acid. The latter may be recognized by passing through a solution of the caustic soda a current of hydrosulphuric acid, when the liquid will finally assume an intense reddish-violet. This is filtered and acidulated with dilute sulphuric acid, when a precipitate will be obtained, which, after being washed, will produce with borax a yellow bead in the outer blow-pipe flame, and a green bead in the inner. On heating the precipitate in the air, a reddish-yellow mass is obtained, which is soluble in ammonia with a yellow color. The latter solution, slightly acidulated with hydrochloric acid, yields a bluish-black precipitate with infusion of nutgalls.—*Dingler's Pol. Jour.*

### NOVEL TROTTING SULKY.

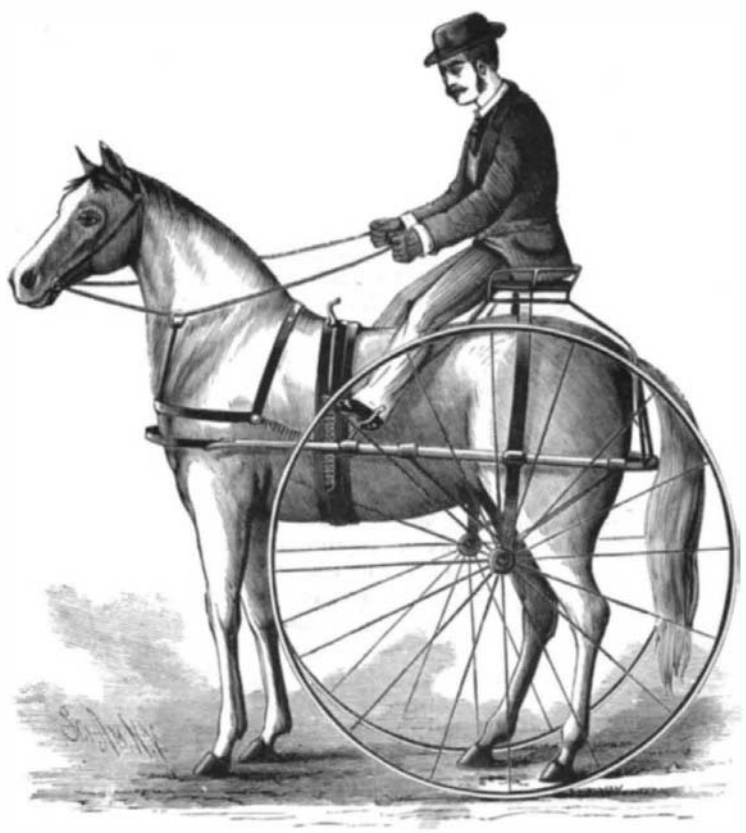
The axle of the sulky shown in the cut is curved upward and extends over the horse. The horse travels between the wheels, and the driver's seat is at the summit of the axle.

The shafts, formed of a continuous piece, meet in a curve at the rear of the horse, and are attached to the axle at a suitable height.

To prevent the irregular movements of the horse's body from being transmitted to the vehicle, the inventor attaches springs to the upper and lower side of each shaft and to the harness saddle.

It is claimed that this improved sulky is safer than those of ordinary construction, and enables the horse to make greater speed.

This invention was recently patented by Mr. C. F. Stillman, of Plainfield, N. J.



STILLMAN'S TROTTING SULKY.

### A Plague Among the Violets.

Another interesting problem for microscopists to solve is the cause of the disease which has broken out among the violets, an account of which was lately given by a leading florist.

When the disease commenced its ravages, some three years ago, violet growing was so far in the hands of a single producer that he had won the titular dignity of the violet king among New York florists. His vast plantation was wrecked in one summer, and he was financially prostrated by the operations of an invisible enemy. The season had been rather dry, and the blight was attributed in this special instance to the substitution of well for brook water in irrigating the plants. Experience soon furnished an emphatic negative to this theory, and showed that the disease was a true blight, like the potato rot, the vine disease, the pear tree blight, and similar destructive agencies that infest the vegetable kingdom. In the violet the disease makes its appearance while the plants are in blossom. The first symptom is the development of nearly circular spots on the petals of the flower, which resemble the spots caused by the concentration of the beams of the sun upon the surfaces of the leaves of plants by the refractive agency of raindrops after a summer shower, the globular and lenticular shape of the drop rendering it equivalent to a minute burning glass, concentrating the rays of the summer sun upon the surface beneath, and completely destroying the delicate vessels thus exposed to intense heat. After this symptom appears, the destruction of the plant is a question of a few hours only; the leaves become limp and wilted, the stem withers from the root, and the delicate organism is soon transformed, from the minutest rootlet to the tip of the leaf, into a dry and lifeless effigy. The origin and natural history of the violet blight have not yet been investigated.

### Poisonous Perfumes.

Various cases of poisoning from the use of perfumes have been reported in recent English journals. In one instance a little girl had bought some heliotrope perfume at a bazar, and had applied it on her face. This caused a vesicular eruption, swelling, itching, and in fact erysipelas, which lasted for some time. The scent was made with some of the products of coal tar, and not with the odoriferous principles of plants, thus acquiring its irritating properties.

### MECHANICAL INVENTIONS.

Mr. Andrew Hein, of Trenton, Mo., has patented an improved vehicle wheel, by which friction is reduced. The object of this invention is to facilitate the construction and easy running of vehicle wheels. The invention consists in providing the hub of the wheel with metallic bands having end cups adapted to contain boxes that carry rollers which bear on the inner circumference of the said cups or hub band extensions. The whole weight of the axle and the load supported by it rest on the rollers which run on the inner faces of the cups, so that the vehicle wheel will move more easily.

A very simple and useful improvement in clocks for night use has been patented by Mr. Ferdinand A. Jaekel, of Cincinnati, Ohio. The object of this invention is the production of a clock the dial and hands of which may be projected upon a canvas or similar surface, like the pictures of a magic lantern, so as to be plainly visible at night. The invention consists in a transparent dial behind which is to be arranged a light, and which has a central stud that carries two wheels, arranged one behind the other, the central portions or bodies of which are also transparent, and have delineated on them, respectively, an hour hand and a minute hand. These wheels mesh with cog wheels on the hand arbors of a clock movement, which may be supported by a stand formed by a chamber for holding the light in rear of the transparent dial. By this construction and arrangement, all the advantages of an illuminated clock are obtained at a comparatively small cost.

An improvement in thill couplings, which provides for a ready and convenient coupling and uncoupling of the thill, firmly holds the latter to the axle, and avoids accidental uncoupling, has been patented by Mr. Harbert K. Forbis, of Danville, Ky. In this invention the thill is united to the jaws of the clip by a bolt or pintle which has an angular arm fast on its back end. This arm, when the thill is coupled, rests on the axle, and is held against the same by a spring latch bolt, the nose of which is beveled to permit of said bolt being forced back by the arm when the latter is adjusted to bear on the axle, after which the spring shoots the bolt and locks the arm. This prevents the removal of the pintle except by holding back the latch bolt and moving the arm of the pintle away from the axle.

A very useful invention, in the shape of a square attachment for saw blades, has been patented by Mr. Thomas U. Mekeel, of Poughkeepsie, N. Y. In this invention the heel portion of the blade of a handsaw has attached to it, by a pin passing through the blade, two bars or strips, that is, one on each side of the blade. These bars are formed with their edge or face toward the point of the saw straight and true. They constitute the head of the square or bevel, and can be turned on the pin which attaches them to the blade, either one independently of the other, to bring their faces at any angle to the back edge of the saw. Ordinarily they will be retained at right angles, in which position they may be held by a spring catch. This invention combines two tools that are generally used together, and the attachment, which is inexpensive, can be readily applied without injury to the saw blade. If desired only one pivoted bar may be used.

Mr. William C. Jones, of Coffeeville, Miss., has patented an improved baling press. The press, which is of a very strong and durable construction, offers every facility for baling cotton and other substances with precision and dispatch. It comprises a stout frame having an upper baling box, which is open below for reception of the follower, and has its sides and ends hinged to open downwards for convenience in removing the bale. Said ends fit grooves formed in the sides, and the latter when closed are secured by hooks. The head block fits within rabbets in the frame to allow it to be slid out for convenience in inserting the material to be pressed. The follower is worked up and down by a rotating screw box formed by the hub of a crown wheel, driven by a pinion, on the shaft of which are large and small pulleys for giving a slow pressing movement and quick return action of the follower.

Mr. William W. Wythe, of Ocean Grove, N. J., has patented an improved speed recorder for railway trains. In this improved apparatus the drum, which carries the chart, receives its motion from the axle of a car, by an eccentric on the axle acting against one or other of two pawls attached to levers on opposite sides of the axle, and provided with disks which operate respectively, according to the direction in which the car is moving, upon one or other of two elastic chambers that compress the air within them. These chambers are connected with two other flexible chambers that act upon levers having pawls which engage with a wheel of a train of gear to rotate the drum in either direction. A pencil moves over the ruled paper of the rotating chart in such manner that the diagonal lines produced are in the direction in which the train is moving, thereby obviating confusion in reading the record. This movement of the pencil is effected by a combination with a loose spur wheel of pinions, a spring operated detent, cord, spring drum, and other devices controlling a pencil-carrying rack bar. In this speed recorder compressed air is used not only to produce the movement, but also to indicate the direction of the prime mover.

Mr. James C. Scott, of Manchester, England, has patented an improved dividing engine, which is very ingenious. The invention consists in an arrangement whereby change wheels are dispensed with and an increased accuracy of division is secured. This is accomplished by causing the handle which gives motion to the movable part always to start from the same point, and to finish, after the required number of turns and fractions of a turn, against an adjustable stop on a graduated disk, after which it is turned in the reverse direction back to the starting point, which is a single notch in the disk that a spring-trigger in the handle

engages with. The apparatus may be used for setting out, cutting, or working divisions on circular or straight lines.

Mr. Fredrick Schneider, of Pagosa Springs, Col., has patented a very useful improvement in open links. The object of the invention is to provide a new and improved open link which is simple in construction and effective and convenient in use. The invention consists in an open link formed of two U-shaped sections provided with internal opposite projections at the ends, which sections are united by a connecting plate provided with recesses in the longitudinal edges to receive the projections at the ends of the U-shaped sections, all these parts being held together by a flat sliding cap and a split spring bolt passing through said cap and the connecting plate.

Mr. William E. Varney, of Daytonville, Iowa, has patented an improved fly-net punch. The object of this invention is to provide a machine for punching holes for the net strands in the leather bars or straps more rapidly and accurately than is now done and without removing any of the leather. The invention consists of a fly-net bar punch, in which a two-pronged fork or punch is reciprocated up and down, within a frame mounted on a table, by means of gearing and a flywheel shaft connected by an eccentric with the punch shaft, and in which the strap or bar to be operated upon is intermittently and automatically fed along the table by mechanism deriving its motion from the flywheel of the device. With this machine the work of preparing the straps or bars for fly netting for horses, etc., is performed with great economy of time and labor.

An improved vehicle gear, the object of which is to provide easier riding springs for buggies and other vehicles, has been patented by Mr. William Lockwood, of Madrid, N. Y. The invention consists in a combination of semi-elliptical springs, centrally secured on the top of the side bars in direction of the length of the latter, and curved end springs passing around the side bars up to and connecting with the extremities of the semi-elliptical springs. This improvement forms a very simple, easy, effective, and economical spring gear.

Mr. John M. Doyle, of North Springfield, Mo., has patented an improved bench dog. The object of this invention is the production of a movable and adjustable bench dog for carpenters' use, and it consists of a notched sliding rack bar or claw and a pivoted toothed lever secured in an angle frame, which frame is adapted to be attached to the bench by means of a lateral bolt or arm entering holes in the side of the bench. A ratchet construction of the frame and a pawl on the lever provide for locking the claw up to the work, and for releasing it therefrom when required. The simplicity and utility of this invention will be apparent to every carpenter.

### The Mines of Tasmania.

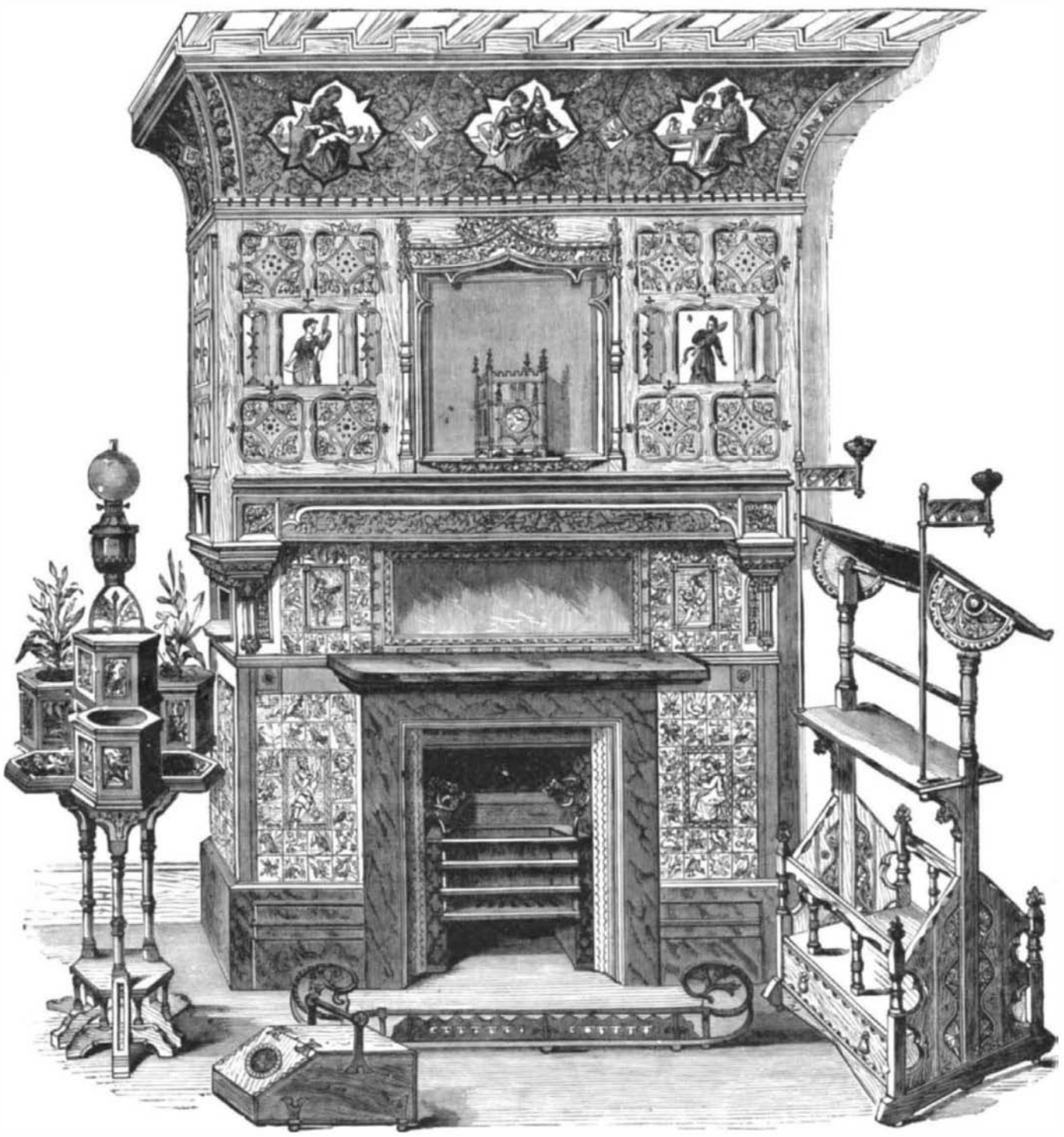
A serious mining fever has been developed in Tasmania—the old Van Diemen's Land—based chiefly upon tin. The Mount Bischoff tin mine, described as a mountain of metal to be quarried rather than mined, is apparently one of the richest if not the richest deposits of tin in the world.

It was in the year 1872 that large deposits of tin ore were first discovered at Mount Bischoff, on the northern side of the island, opposite to Victoria. From the outset the mine in its product of tin proved to be what the Burra Burra of South Australia was first as a copper mine, namely, a deposit so vast as to render superfluous the ordinarily tardy and expensive operations of mining. A mining fever set in, and successively were discovered, not merely many more tin deposits, but also gold, silver, bismuth, antimony, iron, and coal apparently inexhaustible.

From the year 1866 to June 30, 1879, the returns of gold were 48,753 ounces from the alluvial and 72,186 ounces from the quartz.

### ARTISTIC MANTELPIECE.

The engraving represents a magnificent mantelpiece made by Messrs. Cox & Sons, of London, England. The wrought metal work is of exquisite workmanship, and the tiles, painted panels, and diapered patterns are thoroughly artistic. The woodwork is workmanlike in its construction, and the whole design, while massive and imposing, has an elegance that is extremely pleasing.



MANTELPIECE BY COX & SONS LONDON ENGLAND.

### An Ancient Great Lake in the West.

The last quarterly report of the Kansas State Board of Agriculture contains the following: In the geological development it is conceded by scientists that the eastern portion of Kansas, a portion of Nebraska, Southern Iowa, Northern Missouri, etc., was once covered by a fresh water lake, and this body of water received numerous rivers and smaller streams; and that their turbid waters deposited a sediment, varying from a few feet to 150 feet thick.

### Strontianite.

Since it has been shown by Professor Scheibler, of Berlin, that strontium is the most powerful medium of extraction in sugar refinery, owing to its capacity of combining with three parts of saccharate, the idea suggests itself that the same medium might be successfully employed in the arts, and form a not uninteresting subject of speculation for the chemist. Hitherto native strontianite—that is, the 90 to 95 per cent. pure carbonate of strontia (not the cœlestine which frequently is mistaken by the term strontianite)—has not been worked systematically in mines; but what used to be brought to the market was an inferior stone collected in various parts of Germany, chiefly in Westphalia, where it is found on the surface of the fields. Little also has been collected in this manner, and necessarily the quality was subject to the greatest fluctuations. By Dr. Scheibler's important discovery a new era has begun in the matter of strontianite. Deposits of considerable importance have been opened in the Westphalian districts at a very great depth, and the supply of several ten thousand tons per annum seems to be secured, whereas only a short time ago it was not thought possible that more than a few hundred tons could in all be provided.—*Chemical News.*

### Ammonia in Pulmonary Diseases.

At the meeting of the Royal Belgian Academy of Medicine, April 30, 1881, M. Melsens presented a memoir on the therapeutic applications of ammonia, its salts or its complex compounds, requesting that a committee be appointed to examine into the value of his conclusions relative to this question. M. Melsens' communication discusses the applicability of ammonia and its compounds to diseases of the respiratory organs, He concluded, from the fact that phthisical patients are benefited by inhaling the vapors of carbonate of ammonia emanating from stables, that the continuous and moderate inhalation of that salt would be efficacious in other pulmonary affections. He accordingly made the experiment upon himself during an attack of bronchitis, by wearing in a bag attached to his shirt several pieces of ammonic carbonate. Having been completely cured in a few days by this treatment, he subsequently employed it in his practice, with uniform good results. He also applies the remedy directly to the respiratory passages, by means of the spray, with equal success.—*Bulletin de l'Académie Royale de Médecine de Belgique.*

### Carbolic Powder.

A dry powder, containing a definite quantity of carbolic acid, in which form the latter is most easily used as an antiseptic, is prepared, according to a Berlin journal, as follows: 60 parts of rosin and 15 parts of stearine are melted together with a gentle heat, and when the mass has somewhat cooled, but is still liquid, 25 parts of carbolic acid are added. The mixture is then mixed with 700 to 800 parts of precipitated carbonate of calcium, and by careful trituration reduced to a uniform powder. This is to be applied by means of a sprinkling box, which may be securely covered after use.

The powder may be applied either directly to wounds and sores, so as to produce an antiseptic scab, or it may be used for the extempore preparation of carbolized jute dressing by placing several layers of jute, each separately dusted over with the powder, upon each other.

### Cotton Spindles in Fall River, Mass.

The latest published statistics, as found in Earl's "Fall River and its Manufactories of 1880," indicate that very considerable additions have been made to the number of spindles in the city. On the first of July last there were 1,429,412 in operation in the city. At the time of the publication of Earl's book there were 1,364,199. This increase does not include any of the new mills. The new Border City, Sagamore, Shove, Bourne, Globe yarn mill, and the new corporation recently formed will add over 200,000 spindles more, making over 1.629,412 spindles in the city.—*Providence Journal.*