

cally as belting and gearing, its advantages on account of cleanliness and simplicity would be very great. It has been found that cast-iron tubes are not suitable to convey compressed air, because the air leaks through very minute pores, but we think that this difficulty may be overcome by the use of copper pipes or even good iron tubes coated with asphaltum varnish. For many situations a pneumatic power for driving machines would be very valuable and desirable. A steam engine might be employed at a considerable distance from the factory, and the compressed air forced through a tube to drive the machinery. Such a system presents a means of safety from fires, and it also provides for thorough ventilation with the very air which would be employed to execute the labor.

#### EXCURSION OF THE "GREAT EASTERN" TO CAPE MAY.

To give the Americans an opportunity of witnessing her sailing qualities, the directors of the *Great Eastern* steamship determined to send her on a short excursion down the coast to Cape May. She left New York on Monday afternoon, July 30th, at 15 minutes to 5 o'clock, and arrived at Cape May at 7 o'clock, Tuesday morning. Spending the day at Cape May, she returned Tuesday night, arriving at the foot of Christopher-street, New York, at 10 o'clock, Wednesday morning. The charge was \$10 for the passage; the staterooms and meals being extra. She had about 2,000 passengers.

The trip, so far as the sailing qualities of the ship is concerned, was successful. The navigation of the vessel by the officers, the discipline of the crew and the working of the huge oscillators that drive the paddle wheels, as well as of the four smaller engines that propel the screw, were all admirable. The weather was fine, the sea smooth and the speed good; but the arrangements for the care and comfort of the passengers were unsatisfactory. It seems that this duty was entrusted to Mr. Cox, the steward of the ship, who showed that he was unaccustomed to catering for excursion parties. It seemed to us that this failure was the result of short-sightedness and ignorance, rather than from a want of a disposition and effort on the part of the managers. Two of the English directors were on board—Messrs. Yates and Bold—and exerted themselves to make people comfortable, if they did not succeed; and it is our opinion that the fault and complaint of discomfort were owing much to the passengers themselves. They got disgusted at the outset because it was impossible for the cooks and waiters to prepare food and serve everybody at the same time. As soon as the ship had passed Sandy Hook, almost every one on board rushed for the dining cabins to order dinner. Hungry men are not the most patient, and, because they could not all be served immediately, they commenced complaining; and many of them began to help themselves. Thus, disorder and discomfort commenced, and it was impossible afterwards to restore satisfaction.

Again: on the Saturday preceding the Monday of sailing, only about 1,000 tickets had been sold, and stores had, consequently, been provided for only that number. On Monday morning the sun came out bright, and as many more tickets were sold. The fact seems to have been overlooked, in the hurry and excitement, that the stores originally provided for 1,000 people were not ample for twice that number. Most of the papers have severely condemned the whole management; but, while we observed many things which ought to have been done for the comfort of the passengers which were not done, we do not feel like using strong expletives against the managers.

Much has been said about the rolling of the ship. We were informed, on board, that she had 700 tons of water as ballast, which probably accounts for this, although we did not notice as much motion as is experienced on ordinary steamers. Many funny scenes occurred on board; and, notwithstanding the impossibility of getting meals served in the style of our Fifth-avenue Hotel, and the absence of such conveniences for washing as are found in our modern city houses, we think, to those who took a philosophic view of the matter and were of the turn of mind to make the best of every emergency, the excursion was more interesting than it would have been, had there been more to eat and drink and less grumbling. The absence of a generous supply of ice-water for drinking purposes, and of Croton for

washing, and towels for drying, was an unpardonable oversight; but, in other respects, we think few had but little cause to complain of their treatment on board. We were among the number who paid for their tickets and staterooms, and who neither wished nor received any favors from the officers or directors; and we were among the number who, if they did not get all they wanted to eat and drink the moment they called for it, got it afterwards. We returned with a good appetite, perfectly satisfied with the trip and treatment, and more than ever convinced that the *Great Eastern* is entitled to be called the eighth wonder of the world.

#### RECENT AMERICAN INVENTIONS.

The following inventions are among the most useful improvements patented this week. For the claims to these inventions the reader is referred to the official list on another page:—

##### COTTON-PICKER.

This invention relates to an improvement in these contrivances which have been devised for superseding the fingers in picking the cotton direct from the bolls on the standing stalks. These devices are composed of an endless chain of spurs fitted within a suitable box or case and rotated by the operator, the spurs detaching the cotton from the bolls and carrying the same into the box where the cotton is detached by a stripper and discharged into a sack or receptacle attached to the case. In these implements the difficulty has been to detach the cotton from the spurs, the former adhering to the latter and often choking-up or clogging the implement. Besides the stripping brush, used to detach the cotton from the spurs or teeth, rolls up the cotton in knots and renders it extremely bad for subsequent manufacture. This invention consists in the use of a rotary picker and endless belts so arranged as to obviate the above difficulty. The credit of this contrivance is due to Lewis Jennings, of Brooklyn, N. Y.

##### CASTING STAMPS AND DIES FOR QUARTZ-CRUSHERS.

This improvement consists in casting the stamps and dies of quartz-crushing machines in a chilled flask, and around and within a hollow chilled center peice, in such a manner that the stamp or die is chilled entirely through. By thus having stamps and dies chilled, they are useful until worn out, whereas when they are chilled only on the surface, a few months wear soon renders them useless. This improvement, we think, is destined to serve a very useful purpose, and to save the miner an immense amount of outlay for machinery to carry out his operations of obtaining the shining stuff from the flinty rock. This device has been patented to P. W. Gates, of Chicago, Ill.

##### WINDOW BLIND MACHINE.

This invention relates to certain mechanism employed for "laying off" and boring the stiles for the purpose of framing them to their rails, and also for boring the stiles to receive the tenons of the slats. The invention further relates to certain means employed for pricking the blind rods, and a novel mechanism for driving the staples in the rods. The object of this invention is to obtain a machine which will greatly expedite the manufacture of window blinds, and perform the work not only very expeditiously, but in a perfect manner. The inventors of this improvement are W. F. Johnson and J. Doyle, of Wetumpka, Ala.

##### WOODEN BOWL MACHINE.

The object of this invention is to cut out wooden bowls with flanches or rims at their edges, the work to be done at the same time that the bowls are cut out, so as to complete the whole at one operation. The invention consists in having the segment carriage to which the cutter is attached connected to an adjustable or sliding block, and having a supplemental cutter attached to the segment carriage, by which an adjustment of the carriage after each bowl is cut will cause a flanch or rim to be cut thereon. This improvement was designed by Rufus Simonds, of Ludlow, Vt.

##### FINGER-NAIL BRUSH.

This invention consists in combining with a shallow flaring-mouth cup of a suitable diameter, a circular brush, which latter consists of one two or more rows of bristles, arranged in such a manner that the combination will form a neat and efficient article for cleaning the finger nails. William Thomson, of Buffalo, N. Y., is the inventor.

##### SEWING MACHINE.

This invention consists in extending the lever which operates the needle, from the rear to the front end of the machine, and providing said lever with a peculiar curved slot for the eccentric pin of the actuating cam to work in. By this arrangement a great length of leverage to operate the needle bar is secured, and the machine is rendered capable of sewing very heavy cloth, leather, &c., yet can be adjusted for sewing light work. Another improvement consists in having the driving cam located directly under the needles, and so constructed and combined with the feed-motion and shuttle, that the greatest simplicity with the most effective action are obtained.

The Patent Office in deciding this case remarked:—"We are free to say that very great ingenuity has been displayed in the adaptation of the several parts embraced in the claims, for conjoint and harmonious operation, and the gradual increase of power which is applied to the needle, and that makes the machine as capable of sewing thick as well as thin cloth."

We endorse the opinion of the Patent Office, for the improvement is a very useful one. The inventor is W. A. Sutton, of this city, and his claim (No. 29,202) was published on page 76 of the present volume.

##### GRAIN SEPARATOR.

This invention consists in providing the shoe of a separating or threshing machine with an endless lagged elevating apron, so that light straw, heads of grain, &c., falling from the first endless conveyor table of a threshing machine, may be re-elevated and subjected to a second agitation and to the direct action of the fan blast. This is a very useful and valuable improvement, and the patent, as now re-issued, secures to the inventor, Hiram Aldrich, of Michigan City, Ind., the exclusive use of the lagged apron applied directly to a separator shoe; it also gives him protection in the use of a sieve between the apron, and likewise to an extension blasting board.

##### HOT WEATHER AND BURNING WINDS.

In every quarter of the south-west, the heat of the present summer appears to have been unprecedented. In Montgomery, Ala., the thermometer stood for several days at 103° in the shade. In Mississippi, Louisiana, and Missouri, it has ranged from 95° to 105° in the shade, and the people call it "the fiery term."

Several currents of intensely hot air have been experienced which appear to be similar to those which are common in Egypt, Persia, and some portions of India. A hot wind extending about 100 yards in width, lately passed through middle Georgia, and scorched up the cotton crops on a number of plantations. A hot wind also passed through a section of Kansas; it burned up the vegetation in its track and several persons fell victims to its poisonous blast. It lasted for a very short period, during which the thermometer stood at 120°—far above blood heat.

WHERE IS JUDGE MASON?—Many persons daily write to us, inquiring whether Judge Mason can be found at our office in New York or at our branch establishment in Washington. In answer to all such letters we will state that Judge Mason is permanently located in our principal office in this city, where inventors can consult him at any time from 9 o'clock A.M. to 4 P.M. every day. We are enabled to conduct interferences, obtain extensions, render advice on matters of infringement, prepare specifications and drawings for inventors, argue rejected cases before the Commissioner of Patents, furnish copies of papers from the records of the Patent Office—in short, with our present corps of consulting-engineers, specification-writers, draughtsmen, &c., in connection with the assistance rendered by Judge Mason, we are prepared to do almost everything in the patent line.

OHIO MECHANICS' INSTITUTE EXHIBITION.—We would invite the attention of our mechanics and inventors to the advertisement of the above institution (page 110), which will hold its eighteenth annual exhibition at Cincinnati. The committee of management intend to make this exhibition the best that has ever been held in Cincinnati.

THE special committee of physicians appointed by the agricultural bureau of the Patent Office to investigate the cattle disease have made a report in which they state the disease is very much like cholera, and, at present, hard to check.