

sets of slides arranged and operating in combination, whereby I am enabled to produce a double hand planting machine, which is capable of planting two hills of corn at one operation, and which can be operated with the same, if not with greater ease and convenience than the single hand planters in use. It consists, third, in providing the horizontal slide with two holes—one larger than the other, and making it capable of being reversed, so that the quantity of grain may be lessened or increased." Mr. Malone's invention was fully illustrated and described on page 288, Vol. 9, Sci. Am. It is well known as being one of the best inventions of the kind in use. The present re-issue will doubtless give additional value to the patent.]

PORTABLE GRINDING MILL.—Lyman Scott, of St. Louis, Mo. Original Patent dated May 16, 1854: I claim the alternate deep and shallow sections of furrows upon the main grinding surface of the burr, for the purpose of distributing the material over said surface, and preventing a surfeit of clogging upon any one point of said grinding surface, substantially as described.

I claim the method of supporting the shell, and adjusting the burr therein, by means of the lower bridge-tree, grooved legs, sockets and adjusting screw rods, when said legs served the double purpose of supports to the shell, and guides to the bridge-tree, as described.

I claim the arrangement of driver, G, arms, I, burr, B, and shell, A, constructed as herein shown and described, so that the several operations of breaking the ear, cracking the cob, and grinding into meal, may be all conducted without straining the mill, or power applied substantially as described.

ENDLESS CHAIN HORSE POWER.—George Westinghouse, of Central Bridge, N. Y. Original Patent dated June 13, 1854: I wish it to be understood that the mode of gearing, by internal gear and pinion, I have adopted, is old, and has long been in use, but the peculiar construction of the parts of it is my invention.

Therefore, I claim the construction and attachment of the gearing, substantially as set forth, having a hub or pinion permanently affixed on the ends of each shaft, to either of which, the center caps or hubs of either the driving or band wheels fit and are fastened.

Foreign Editorial Correspondence.—No. 7.

Paris Exhibition, &c.

PARIS, June 21, 1855.

I regret that up to this time I have been obliged, for the want of something better to do, to waste my time upon the mere surface work of the Exhibition, instead of treating the more important subjects that belong to the manufacturing and mechanical interests. The backward state of affairs in the machinery department, together with the reckless confusion every where visible, have prevented me from attempting any analysis of such subjects as are most interesting to the readers of the SCIENTIFIC AMERICAN.—

The past two weeks have wrought great changes in the condition of the machinery to be exhibited and now, instead of a confused mass of boxes and scattered iron muscle, intermixed with bricks and mortar, order begins to appear, and most of the machines stand sleeping and motionless under their canvas covering, and only need the lash of the motive power to enable them to exhibit their true metal. The spectacle will be interesting, as most of the machinery will be actively employed in producing articles for which they are intended, and thus will be gathered under one roof, almost the entire details of manufacturing industry. I already recognize many old and familiar faces, imposingly put forward "to work revolutions," inventions that have many times been buried in the United States within the past ten years. Thus, one exhibitor is constantly attracting an eager crowd to witness the working of a model of an endless chain propeller—an invention reaching so far back into the early history of propelling and steam navigation as to be almost lost in the maze of obscurity. He announces his intention to create a complete revolution in the system of navigation. It would not be difficult to pile up a long catalogue of similar *antiques*, but this would be neither useful nor interesting. So far as I can judge, the display of machinery will be more useful than really novel, yet I hope to discover some new inventions, a notice of which will confer some benefit upon the mechanical industry of the United States. I wish now, very briefly, to place upon record some facts concerning the management of the Exhibition, for the future justification of the American Commissioners who are now here devoting their time to the interests of their countrymen. I indicated in my first letter, that the United States Department would be a failure, and have since given my reasons for it, therefore it is unnecessary to elaborate this point now so generally understood. Under the administration of General Morin, the Director-in-chief, many concessions were made, and justly so, to the United States, and a very large and valuable space was awarded to them, under the hope that a good contribution would be the result. This was an error, one that ought not to have been committed after the experience of the London Exhibition. Upon the day set for the opening of the palace, it was evident that the indulgent grant of space made to the

States was a gross error, and measures were taken to gradually cede to the Imperial Commission such portions of the generous allotment as could not be made use of, and under the written assurances of the Commissioner of Classification that all articles sent from the States would be received at any time during the Exhibition, letters were sent out to exhibitors to send on their articles without delay, as there was plenty of space for them, and ample time to place their articles upon exhibition. Suddenly, with one grand flourish of Prince Napoleon's baton of authority, Gen. Morin, and also M. Fresco, Commissioner of Classification, are wheeled out of the ranks, and new men appointed in their stead. Now comes a new order of things. The new broom commences, and is expected to make a clean sweep. The American Commissioners are attacked, and a mighty flurry of dust and confusion envelops them. They are charged with laxity in management, and are warned that if the space is not occupied within so many hours, that the Imperial Commission would take violent possession of it. No regard is paid to the concessions made to the United States by the former manager—these are set at naught, and while its Commissioners were waiting with ghastly countenances for the arrival of boxes,—some by Havre, some by the Orkney Islands, and some by way of Adrianople,—the Imperial Commissioner comes down bang upon them, with the cry that their "admirable patience" is clean gone, and that every square foot of unoccupied space, after a certain hour of the day, would be taken possession of by them, as they could no longer forbear. The plea of former concessions is in vain, and our pledges to exhibitors are treated with contempt, and, as good as their word, we were suddenly hustled out, and compelled to bivouac upon a more dense, and less freely ventilated ground.

Therefore, the United States exhibitors who may decide to send additional contributions, will find upon their arrival, the doors closed against them. This may appear severe, and it is in one point of view, but the interests of the Exhibition have suffered from the tardy manner in which United States exhibitors have sent forward their contributions, and it is but fair now to submit with becoming decency to the efforts of the Imperial Commission, to protect the interests of the Exhibition, from suffering. Goods from the United States have been straggling along from all points in the compass, solely from the carelessness of their contributors in not observing the necessary directions for their packing; and I may mention as one evidence of this fact, that a case of goods was traced to Aix la Chapelle, a city on the eastern frontier of Prussia. The exhibitor traveled eleven days in the "annex" searching for his box, and must have made, at least, a distance of one hundred miles in his peregrinations. Many exhibitors have sent their goods without any regard to care in packing, and others have made no arrangement for having them exhibited at all, unless they expect the Commissioners to procure suitable cases and attend to fitting up the stalls at their own expense, which of course they are wholly unwilling to do.

It is now a matter of regret to every American in Paris, that any efforts have been made to have a distinct Exhibition from the United States, as failure—a word that grates harsh upon the ear of our people—stares us full in the face, and no efforts, however herculean, can now prevent a result so mortifyingly unpleasant.

With this brief statement of the results that menace us, I will quit the murky details of the Exhibition, and endeavor in future, now that the field begins to become clear, to find something more useful and congenial to dwell upon.

S. H. W.

Model Steam Engines.

Some of the most beautiful working model steam engines that we have ever had the pleasure of seeing, are manufactured by Mr. H. Schlarbaum, cor. Reade street and Broadway, New York. A complete model engine and boiler, standing 6 or 8 inches high, costs

only \$8. The engine is on the oscillating plan. All one has to do, to set it in operation, is to pour in a little water and light a small spirit lamp beneath the boiler. In a few minutes the little joker begins to snort and puff—on a very small scale, to be sure—while the diminutive fly wheel revolves with lightning rapidity. There is no danger of explosion. They reflect much credit upon the skill of Mr. S. as a model maker.

War News.

On the 18th of June, the Allied army before Sevastopol sustained a terrible defeat in attempting to take the fortress Redan. Their loss, in killed and wounded, was over five thousand, and among the slain were several of their bravest and most prominent commanders.

A correspondent of the *National Intelligencer* says, that the French army of reserve, as it was called, that was near Constantinople, has been forwarded to Sevastopol, but a new army of reserve will be sent immediately from France consisting of 45,000 to 50,000 men, which will be entrenched near Constantinople, and will not be sent to Sevastopol except in case of great necessity. The full force before that place will be kept up by other troops, which will be forwarded direct from Toulon, Marseilles and Algeria.

Every thing indicates that they do not intend to quit Constantinople, where they are constructing buildings on the most extensive scale and of very massive nature, which will require years to complete. These structures are intended for defence and protection as well as for accommodations for troops and material. The French will take the lion's share by holding the European coast of Turkey, while the English may take the Asiatic side of the Bosphorus.

The sufferings of the Allies have recommenced. There is even a want of water, and under a burning sun to which they are exposed, the cholera has re-appeared, and several distinguished officers have died of it. Typhus and other fevers, with dysentery, are all very prevalent, and ophthalmia is also making progress among them.

Various American clipper ships have been embarking troops, materiel, &c., and most of them have sailed from Toulon and Marseilles. The *Great Republic* was towed by the *Navarino*, of 100 guns, a screw three-decker; the *Queen of Clippers* by the steam frigate *Eldorado*. The *Monarch of the Sea*, the *Gauntlet*, the *Nonpareil*, and the *Alleghanian*, all went under their own canvas. The above six vessels took on the aggregate 1,900 horses, 2,800 troops, and more than 10,000 tons of military stores and supplies, beside what was on board the two ships of war, both of which were loaded down with similar articles. One of the above vessels had on board 500 tons of bombs.

It is reported that the owners of the ex-hot air but now steam ship *Ericsson*, expect to sell or charter her to the allies.

The St. Petersburg *Naval Magazine* publishes a report from Dr. Peragoff, chief army surgeon at Sevastopol, in which it is said that never in the history of surgery were such frightful wounds known as those which came under the treatment of the Russian surgeons during the bombardment which commenced April 9th, and caused by the 65-pounder shot and 200-pound shell of the besiegers. On the 9th, besides small operations of surgery, 300 amputations were performed in only three of the operating rooms. In the chief depot of wounded, ten surgeons were continuously occupied, and a large assembly room was four times successively filled with wounded.

Another Great Russian Railway.

To show how great are the exertions of Russia in the present war, it is now said that they have, by the most incredible exertions, so far advanced with a railroad from Moscow to Perekop, that it will be completed and in full operation in the autumn. This will enable them to pour into the Crimea soldiers and supplies without limit. The French are so well aware of this that they are fortifying Kamiesch, and will render it the strongest

fortress in Europe, and sooner or later they will probably retire to it. Perekop is about 800 miles south from Moscow, and stands at the junction of the Crimean Peninsula with the main land. It is 100 miles north of Sevastopol. When the above railroad is complete, Russia will have a continuous track of over 1200 miles in length, extending north and south through her dominions, from St. Petersburg, on the Gulf of Finland, to the shores of the Black Sea. At no distant day, St. Petersburg and Constantinople will doubtless be connected by railroad.

The Heat of Steam.

Our neighbor of the *Railroad Advocate* is getting facetious. He compares himself to Perkins' steam gun charged with steam of 360,400°, and thinks he ought to make some impression upon our brass, but as he has confessed that this high temperature of his represents *nothing*, his volleys can neither do good nor harm to our brazen walls. Our cotemporary, like ourselves, may possess a considerable quantity of such a useful and respectable metal as brass, but he lays the lacquer on so awfully thick, it is difficult to perceive the metal, especially when it gets up to 360,400°.

Mechanical Trade Reviving.

The Boston *Traveler* states that the business in the machine shops of that city is beginning to revive, and that manufactures are returning to life and activity. A good fall business is anticipated, as orders are coming in rapidly. One locomotive firm has recently received an order for the building of 40 new engines. We are glad to hear this.

Terrible Steamboat Explosion.

The steamboat *Lexington* exploded her boilers on the 30th ult., near Rome, on the Ohio river. Both boilers burst with a terrific noise, in the night. Four persons were killed and twenty-five wounded. This is the first disastrous explosion since the new law went into force. We hope the inspectors in that district will give the case a thorough sifting.

Balloon Traveling.

Mr. S. Rangard made a successful balloon ascension from Springfield, Mass., July 4. He ascended 15,000 feet, passed several thunder-storms below, and landed in 30 minutes at New Salem—air-line distance traveled, 30 miles, being at a velocity of a mile a minute. When shall we have trains of balloon cars, starting and arriving at fixed hours.

Horse Flesh vs. Steam Power.

A grand horse race took place on the Centreville course, near New York, on the 12th inst. A racing mare called *Lady Fulton*, was entered to trot a distance of 20 miles within one hour, for a wager of \$5000. The animal was driven in harness, and won the bet by accomplishing the distance in 59 minutes and 55 seconds. Rapid traveling and close shaving that.

The Voyage of the Ericsson.

The *North Star* arrived at this port on Friday last week, and reported that she met the *Ericsson* on the 30th ult., 45 miles from Havre. The old *Washington* beat her one day. Without any cargo, the *Ericsson* has taken 14½ days to make the voyage.

Patent Office Promotion.

Mr. A. B. Little, late law clerk in the Patent Office, has been promoted to a principal Examinership, and will devote his labors to the class of Miscellaneous Inventions. Mr. L. is a man of discrimination and experience. We are glad to record the fact of his elevation.

The New York and Erie Railroad and the New York Central Railroad have, it is said, set up opposition, the Erie having put down its fare to attract passengers. There is quite an ill feeling in existence between the managers of the two railroads.

Ship building in Portsmouth, Me., appears to be brisk; eight large ships are now on the stocks.