

Miscellaneous.

[Special Correspondence of the Scientific American.]
Matters and Things Connected with the
Great Exhibition.

LONDON, 28th April, 1851.

There is a silly rumor going about England that it is the intention of the French Socialists and the English Chartists to combine and provoke a civil war during the progress of the Exhibition, and, as a consequence, a vast deal of nervous anxiety is entertained by the speculative portion of the John Bulls. How this report originated, or what grounds it has, we are unable to say, but true it is that such a belief exists, and to a very great extent.

Up to the alpha of May (which bids fair to glide in upon us in all its loveliness) no one is admitted to the Exhibition but "exhibitors," "agents," "Commissioners," or "assistants," and these, even, are cross-questioned to such an extent that it makes a visit little more than a series of disagreeable annoyances. At almost every turn, a policeman demands "your ticket," which, if you chance to be an American, only admits you to the American division; if an Englishman, to the English portion, and so on. In consequence of this unnecessary rigidity, and the officiousness of the men on duty, those inquisitive persons who wish to enjoy a general stroll over the various sections, are compelled to resort to all sorts of stratagems and finesse. It is not an uncommon thing to see a group of strangers, who have by some device, got into the building, crawling along through the rows and "confusion worse confounded" of bales and packing-cases, in breathless anxiety, watching the movements of the attendant police, in the fear that every moment they may put an end to their wanderings.

The American department is progressing, we regret to say, slowly. There seems to have been a spirit of jealousy and a desire to monopolize the arrangement, on the part of several gentlemen who claim to be representatives of the government. Mr. Riddell, the Commissioner, appears to be active and enterprising, but from some cause or other, not entirely discernable, the wheels of the machine do not move as glibly and unconstrainedly as we would wish. The French have adjusted their differences, and are now going on, as the Yankees say, like "clock-work"—their stalls are erected in a style of great magnificence, the shelves being, in some instances, lined with velvet, and everything is worthy of the taste and elegance of their national industry.

At a meeting, on the 13th, of above two hundred French contributors, it was announced that some of the most celebrated pupils of the Parisian School of Industry were to be sent under the care of their several teachers, free of expense, to visit the Exhibition, and that Richard Cobden, M. P., proposed offering the hospitality of home, during the summer holidays, to one of those boys, an example of which, it was stated, many other distinguished Englishmen had expressed their intention of following. The idea was caught up with the utmost enthusiasm; and there was not a French exhibitor present who did not at once declare that he would, in return, invite some pupil of the English schools of design. Here, then, we have, springing from the Exhibition, a true beginning of perpetual international amity.

The total number of packages received, up to the date of my letter, is 9,575.

Seventy tons of white lead have been used in painting the monster building.

A company has been formed, at Madrid, Spain, for the purpose of conveying passengers to the Great Fair. It is thought that half of the Spanish grandees will be in London during this year.

The Americans who are astray here will find lots of their papers on file at "Lloyd's Reading Room," which fact they may find it important to remember, as the rooms will be turned over to foreign visitors from 7 A. M. to 3 P. M. This is a kind, considerate provision on the part of the proprietors of this fine *depot de journal*, and will be availed of, we have no doubt, by the hosts of strangers.

There is a general complaint here that there is no established place where Americans can meet. With the exception, perhaps, of House's Grand Sarsaparilla Depot, in the Strand, (and, by-the-by, we would observe that Dr. Townsend is famous already in all parts of the realm), there is no hotel, shop, or building, in this great metropolis, where you could, with any degree of certainty, look after a brother-American. A spot should be selected, as it would be gratifying for us to know who is coming, who has come, and all the particulars.

H. H. P.

Opening of the Great Exhibition.—London on the 1st of May.

LONDON, May 2, 1851.

We were on the ground—that is to say, opposite the great building—at 6 o'clock in the morning, when we flattered ourselves that, by selecting such an early hour, we should get a desirable standing-place and escape, to some extent, the rude jostling of the leviathan crowd,—but, when we arrived, it seemed that seventy thousand individuals, beside ourselves, had conceived the same shrewd idea, and, per consequence, at just past daylight, the throng was most intense; there were acres of human beings from Knightsbridge to the Albert Gate of Hyde Park, and so on to Buckingham Palace, taking in the vast area of the Green Park and all the various thoroughfares leading thereto. We shall never forget the sight; and even at this early hour, an old inhabitant of London remarked to us that he had never witnessed its equal in broad day, much less at a time when it was fair to presume that half the metropolis were in their beds. The crowds kept pouring in the direction of Hyde Park by shoals of hundreds, thousands, and tens of thousands, until about 2 o'clock, when, after the Queen had left the crystal building, the mighty current seemed to turn and disappear in the mazes of London streets. It is calculated that there were over 3,000,000 people in the neighborhood of Hyde Park, among which were natives of various countries, not forgetting the glorious presence of about 600 Americans who contributed, in a small degree, to swell the almost interminable mass of vitality.

The carriages commenced their approach to the east, south, and west doors of the building about nine o'clock, and at the hour of eleven the cortege reached from this point along Picadilly to the Regent Circus, on to Long Acre, and around to Gray's Inn, a distance of about eight miles. This cortege was formed of every variety of vehicle, from the stylish aristocratic carriage of the nobility to the tradesman's humble cart, all of which contained holders of season tickets, which, not being admitted after 12 o'clock, they made good use of their time by riding to their place of destination. The inmates of the carriages—more especially the ladies, were in full dress, and the spectacle presented was very magnificent—the liveries, too, were out in all of their variety, from plain black to red and scarlet plush, blue and orange, three-cornered hats trimmed with silver and gold lace—the richness and variety of which combined to make up a delicious street panorama.

At half-past ten, to the minute, the Queen and His Royal Highness left Buckingham Palace, which was besieged by tens of thousands of persons, and proceeded along Constitution Hill. First in order came a troop of the Life Guards, then the Gentleman Usher of Sword and State, in a state carriage drawn by six bays; the second carriage was occupied by lords and grooms in waiting on Prince Albert; the third by the lord in waiting, the Treasurer of the royal household, and the Vice Chamberlain; the fourth by the groom of the stole to the Royal Consort, Captain of the Yeomen of the Guard, Captain of the gentlemen-at-arms, and the master of the buck-hounds; the fifth by maids of honor in waiting, bed-chamber women, and the earl marshal; the sixth by the lord steward and maids of honor in waiting. Then followed, in coronation dresses, twelve state footmen walking two abreast, after which came the Queen's state coach drawn by four cream-colored Arabian horses, attended by grooms, conveying Her Majesty the Queen, the Prince Consort, and the mis-

tress of the robes, the Duchess of Sutherland. The master of the horse, a guard of honor, and an escort of the Life Guards, closed the line, which was, in all respects, a truly gorgeous display. Her Majesty looked in excellent health, and when the royal carriage passed us, she was chatting and laughing with the Prince, who bore his blushing honors with becoming grace and dignity.

As the royal cortege proceeded along it was hailed with tremendous cheering at every point by the wilderness of spectators, and although the crowd was so great, few, if any, accidents occurred to mar the universal enthusiasm. After Her Majesty had alighted at the Exposition, she ascended a platform raised to the north of the centre of the transept, on which a chair of state was placed, when, after she was seated, a select choir sung "God Save the Queen." After Her Majesty had been in the building some five minutes, Prince Albert joined the Royal Commissioners, and when the music had ceased, proceeded to read to Her Majesty a short report of the proceedings up to that time, which he then delivered to Her Majesty, together with the catalogue of the articles exhibited. Her Majesty returned a gracious answer, handed to her by the Secretary of State; after which his Royal Highness again took his place by the side of Her Majesty. His Grace, the Archbishop of Canterbury then said a prayer, invoking God's blessing upon the undertaking, and the choir sang the Hallelujah Chorus.

After this, a procession was formed, consisting of the various committees and commissioners, native and foreign, and the royal suite, which turned to the right, then moved to the west end of the nave by its north side, returned to the east end of the nave by its south side, including the south end of the transept and proceeded back to the centre along the north side of the nave, which arrangement enabled all of the visitors who had places assigned them to see Her Majesty and the procession.

On Her Majesty's return to the platform she declared "The Exhibition Opened," which declaration was followed by a flourish of trumpets and the firing of a royal salute on the north of the Serpentine, whereupon the barriers which had kept the nave clear was thrown open and the public allowed to circulate.

After Her Majesty's return to Buckingham Palace, the crowds gradually broke and dispersed, all more or less gratified, delighted, or vexed with disappointment, or weary from waiting, as the case might be. It was a memorable event, and will be a bright page in the annals of English history. Shops and stores were closed in the business portions of the metropolis, and with few exceptions there was a general suspension of business.

The arrival of strangers from the country, on Wednesday, was extraordinarily large. It was calculated that the extra passengers by the North Western Railway exceeded 5,000, and those who arrived by the Great Western are estimated at nearly 3,000 more than the ordinary number. The steam vessels from Rotterdam, Hamburg, Antwerp, Hull, Edinburgh, Calais, Boulogne, Havre, and Dieppe, were unusually crowded with passengers, so that, on a moderate calculation, the number of persons who arrived in London by different conveyances, on the 30th of April, was not less than 55,000. In the vicinity of the railway termini not a bed can be had, as the saying goes, "for love nor money."

The "Times," learns that the Queen has signified her intention to visit the Exhibition some Saturday, during the hours before the public are admitted, when all exhibitors are invited to be present and in their places, to answer any inquiries which Her Majesty may desire to make respecting articles exhibited by them.

H. H. P.

For the Scientific American.

Steam—"Stame."

Your correspondent, Mr. Whipple, of Westfield, Mass., states he has obtained more than twice as much power from fuel employed for stame as from fuel employed for steam. Although this advantage is of considerable value, yet I have and can obtain much more than

four times the power from fuel employed for stame than can be obtained from fuel employed for steam, in a high pressure engine, and much more than six times the power from fuel employed for stame in a low pressure engine. These great and beneficial results directly depend on the properties of the engines, and particularly on the peculiar construction and position of the heaters employed.

Having experimented with many different formed heaters, I have obtained very different results therefrom: for instance, among other and certainly unexpected objections, I found, on passing steam through a cylindrical heater, corresponding with the description given by Mr. Whipple, that the steam was but little heated therein, being apparently driven in a direct course through it without coming in sufficient contact with the cylinder, which had quite as extensive a surface as another equally heated heater, but constructed of a long coil of tube; the effect produced by the cylinder was not more than half that produced by the coil—apparently from the better contact of the steam in its passage therein.

The coil, cylinder, engine, and connected philosophical apparatus, for showing the nature and value of "stame," are still open for public inspection. Very respectfully,
JAMES FROST, Engineer.

The Useful More Enduring than the Magnificent.

The tomb of Moses is unknown; but the traveller slakes his thirst at the well of Jacob. The gorgeous palace of the wisest and wealthiest of monarchs, with the cedar, and gold, and ivory, and even the great Temple of Jerusalem, hallowed by the visible glory of the Deity himself, are gone; but Solomon's reservoirs are as perfect as ever. Of the ancient architecture of the Holy City, not one stone is left upon another; but the pool of Bethesda commands the pilgrim's reverence at the present day. The columns of Persopolis are mouldering into dust; but its cisterns and aqueducts remain to challenge our admiration. The golden house of Nero is a mass of ruins; but the Aqua Claudia still pours into Rome its limpid stream. The Temple of the Sun in Tadmor, in the wilderness, has fallen; but its fountain sparkles as freshly in its rays as when thousands of worshippers thronged its lofty colonnades. It may be that London will share the fate of Babylon, and nothing be left to mark its site save mounds of crumbling brickwork. The Thames will continue to flow as it does now; and if any work of art should still rise over the deep ocean of time, we may well believe that it will be neither a palace nor a temple, but some vast aqueduct or reservoir; and if any name should still flash through the mist of antiquity, it will probably be that of the man who, in his day, sought the happiness of his fellow men, rather than their glory, and linked his memory to some great work of national utility and benevolence. This is the true glory which outlives all others, and shines with undying lustre from generation to generation, imparting to works something of its own immortality, and in some degree rescuing them from the ruin which overtakes the ordinary monuments of historical tradition or mere magnificence.

To Dampen the Sound of an Anvil.

If a chain, about one foot long, formed of a few large links, is suspended to the small end of an anvil, it will destroy that sharp thrilling noise produced by striking on it with the hammer: the vibrations of the anvil are extended to the chain, which absorbs them without producing any sound. This is good advice to anybody who has a blacksmith or, worse yet, a coppersmith for a neighbor.

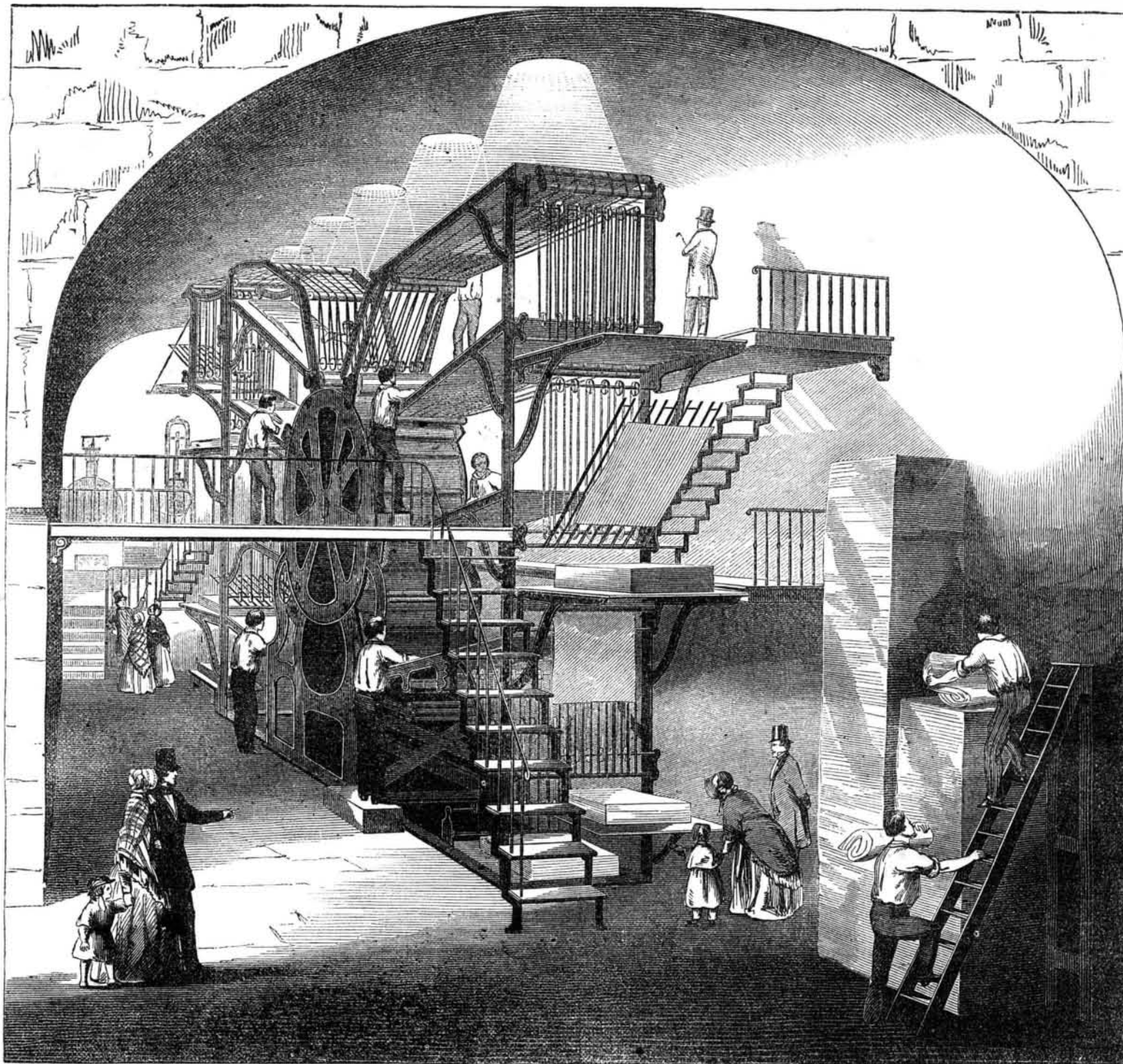
Straw Bonnet Manufactory.

At Sag Harbor, L. I., there is a very large manufactory of straw bonnets: there are about 100 females employed, and about 24,000 bonnets will be sent to this city from it during the present season.

A man's character is frequently treated like a grate—blackened all over first to come out the brighter afterwards.

The English papers record the death of the brother of Mungo Park, the great traveller.

HOE'S MAMMOTH ROTARY PRINTING PRESS.



The Art of Printing consists in having types made of a composite metal, cast into a single piece for every letter that is seen in a book or newspaper. These letters are put together one after another into words and sentences, and punctuated with commas, &c. The words are arranged in lines, the lines in columns, and set up in an iron frame named a *Chase*. The type are all of the same depth, and are wedged up and secured in the chase, when it is then denominated the *Form*. It requires a great deal of labor to set up the type,—the men who do so are termed *Compositors*. The inking of the type in the form, the placing of a sheet of paper on it, then pressing the said sheet down on the type, and afterwards removing it, constitute the art of printing, and these several operations are performed in a mere expeditious manner by the press which illustrates this article than by any other in the world. This mammoth press, the largest ever constructed, was designed and built by Messrs. R. Hoe & Co., New York: it is 40 feet in length and 5 wide; it has a large central drum which revolves like a broad wheel. The *form* (or there may be a number of them) is placed on the periphery of the central drum, but only occupies a portion of it. The *chase* is curved and forms the section of a circle, with the surface of the type forming the outside of the same. The type are secured in the curved chase in a peculiar manner. The column-rules are straight and run parallel with the shaft of the large drum; the head and dash rules are curved. The column-rules have bottom flanges; they slide in the grooves in the bed of the chase, and are secured by brass dove-tail wedges. The cross section of a column-rule is

of a wedge shape, being thinner at the bottom than at the top, to wedge in the type at the widest part of a circle which they form with the large drum. This is an essential feature in securing the type, and its application is certainly the result of a very happy thought. The type is firmly screwed up in the chase by set screws.

The surface of the large drum of the press is composed of smooth metal plates, and performs the office of an ink distributor to the small rollers which ink the type. Below the large rotary drum, there is a trough running across the frame, into which the ink is pumped from a reservoir by a force pump, so as to keep the trough always full. Above the ink trough there revolves a large roller, which takes up the ink on its surface, conveys it to another roller, that one to a third, and it to the smooth surface of the revolving drum, distributing the ink on it. The use of the three rollers to convey the ink from the trough, is to work and spread it on the distributing surface. As the type in the *chase* stands higher than the smooth surface of the rotary drum, the ink-roller below would cover the type with ink when it came round to it, were it not for a contrivance of Messrs. Hoe to obviate this difficulty. The large ink-roller below has its gudgeons worked on springs, which press it up against the smooth surface of the large drum, except at the exact time during the passage of the type; then a cam forces down the ink-roller below the surface of the type, until the *form* is past the point of contact, when it rises up against the distributing surface with its supply of ink.

Around the fixed frame at different but ex-

act points above the large *drum*, there are eight revolving tympan cylinders, or rollers, which feed in the sheets to the revolving drum, and against the surface of which the *form*, as it revolves, impresses the paper. The attendants push in the sheets, one by one, to the tympan, in each of which is an open section, with fingers worked by a cam, which are open when they come round to receive a sheet, then close upon it, wrapping the said sheet around the smooth surface of the tympan; at this very period, the type on the large drum has come round, and is acting on the paper. When the type has printed the sheet, the fingers spoken of open like the human hand and the printed sheet is whipped off the tympan and carried away back to the end of the press, there to be taken off and folded neatly down by a vibratory flyer, four of which are placed above one another, (one for each tympan,) at each side of the press. The two outside edges of each sheet of paper are held against a smooth, narrow strap on the tympan at each side. Above each tympan cylinder, it will be observed there are a number of small pulleys, with straps running around them, extending the whole length of each tympan, and running on its surface. The straps of these small pulleys run away back over a like set of pulleys, above the flyers. Whenever the type forms its impression on the sheet, the fingers spoken of let the paper free, and then these small straps whip up the sheet, and carry it along, as on a flying railroad, to be folded by the flyer. After the form makes its impression on the paper which is wrapped around the tympan, it comes in contact with the two small ink rollers,

which ink the surface of the type, and fit it to print the sheet on the next tympan, and so on continually. These small inking rollers have their journals fitted on springs, so as to allow them to be pushed up or down by the type, and then to be forced against the distributing surface, to take up the ink for their next performance.

In this one press, it may be said, "there are eight combined," that is, in respect to its effective power. One, two, three, or more tympan cylinders can be detached, and the rest left free to work. This makes it very convenient, for it requires but a moment's labor to set the press so as to work with any number less than the eight attendants.

Although this machine is so large, strictly speaking it is exceedingly simple in its operation, and it works with a smoothness and regularity that commands admiration. The building of this great press for the New York Sun, was commenced in 1849, and it was completed in 1851.

In the construction of this press Messrs. Hoe & Co. state that there are employed no less than six thousand bolts and screws, one thousand two hundred wheels, two hundred and two wooden rollers, four hundred pulleys, four hundred tape guides, besides an amazing amount of cogged wheel connections, arms, braces, and other connections. There are also required to give motion to various parts of the machine, no less than five hundred yards of belting.

It can print 20,000 copies in one hour. It has been in successful operation printing the New York Sun for the past three months, and it operates with astonishing precision.